MEDICAL RECORD

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—Claude Bernard

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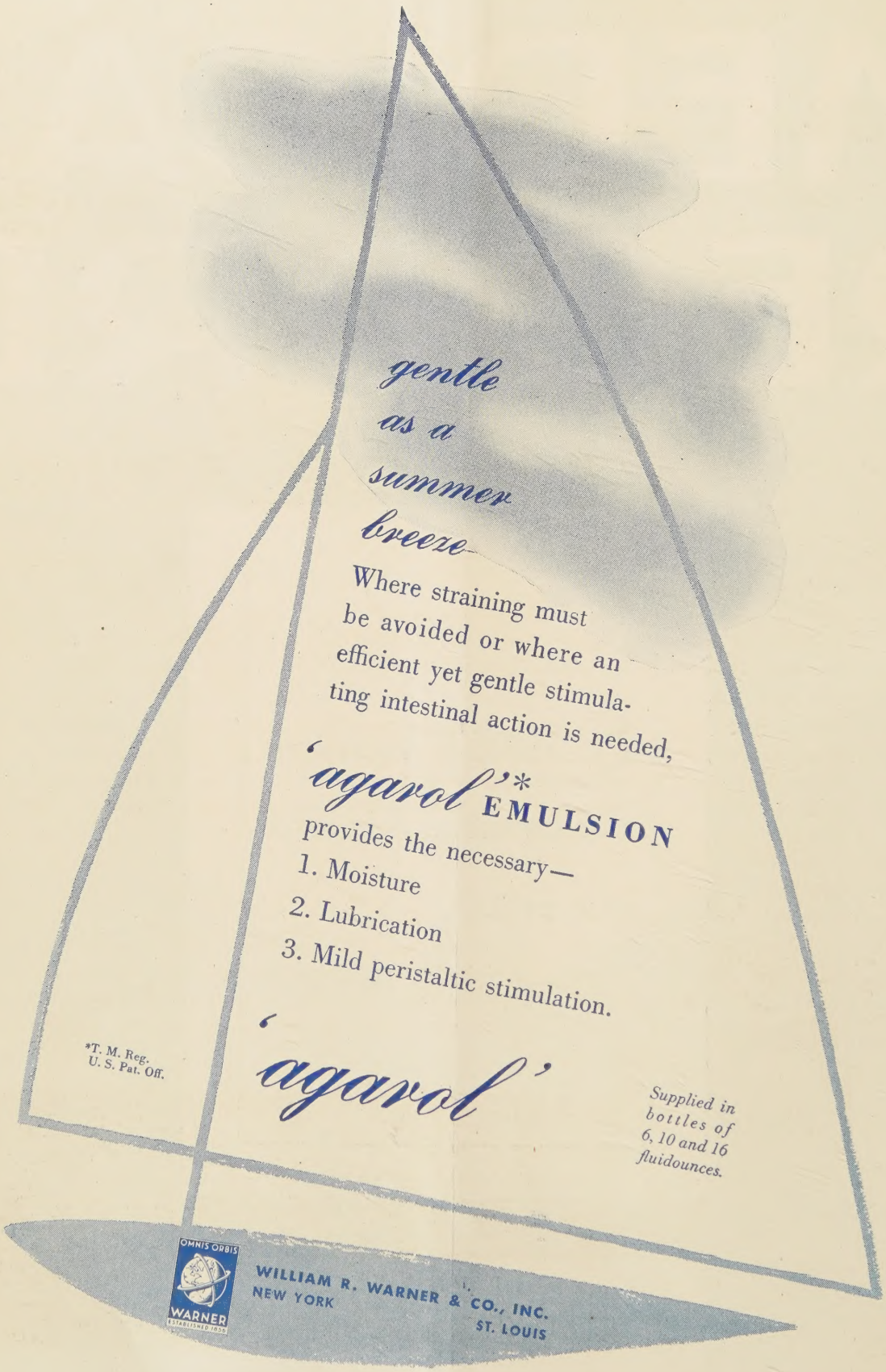
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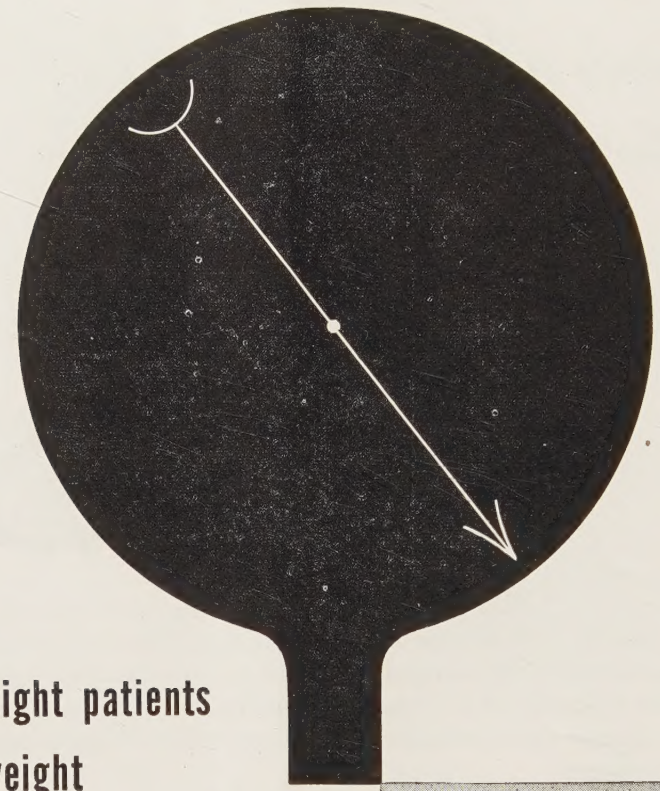

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JULY, 1947

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Medical Research Grants

Medical research grants amounting to more than two million dollars have been recommended for the approval of Dr. Thomas Parran, Surgeon General, United States Public Health Service, by the National Advisory Health Council. Grants are contingent upon appropriations by the Congress for the fiscal year 1948 which begins July 1, 1947.

Of the one hundred ninety-three grants that supplement existing funds of universities and other research, institutions, the largest, $105,800 was recommended for a study of syphilis by the Pan American Sanitary Bureau. Sums of $52,454 and $46,000 respectively, were slated for the study of malaria by the University of Chicago and Christ Hospital, Cincinnati, Ohio. Six other grants were above a $30,000 level.

Research studies involved, cover a diverse number of subjects including tropical diseases, biochemistry and nutrition, cardiovascular diseases dental research, gerontology, hematology, pathology, physiology, surgery, antiobiotics, tuberculosis, bacteriology, pharmacology, radiobiology, metabolism and endocrinology, sanitation, virus and rickettsial infections, and public health methods. The use of grants in aid in pursuing these studies implies no degree of Federal control. The investigator may work with full independence and autonomy, submitting only a brief concise report of scientific progress annually.

Passano Foundation Award

Dr. Selman A. Waksman, microbiologist at the New Jersey Agricultural Experiment Station, New Brunswick, New Jersey, has been selected as the 1947 recipient of the Passano Foundation Award. Presentation of the $5000 cash award was made at a dinner held at the Ritz-Carlton Hotel, Atlantic City, on Thursday evening, June 12th, during the week of the Centennial Meeting of the American Medical Association in Atlantic City.

Established in 1943 by The Williams & Wilkins Company, medical publishers, of Baltimore, Maryland, the Foundation proposes to encourage medical research, especially that which has clinical application, and has established the award as one of its activities. Dr. Emil Novak, associate in gynecology in the Johns Hopkins University Medical School, Dr. Nicholson J. Eastman, professor of obstetrics in the Johns Hopkins, and Dr. George W. Corner, director of the embryological laboratory of the Carnegie Institution of Washington represent the medical profession on the Board of the Foundation.

Dr. Waksman received the award for his original research in the field of antibiotics, culminating with his discovery of streptomycin, which among its many uses gives promise of being useful in the successful treatment of tuberculosis.

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Open Forum

This Food Enrichment Business

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Enriched white bread is no more mandatory. War Food Order No. 1, which required bakers throughout the nation to build up the nutritive value of white bread by adding iron and B vitamins has passed into history. There it can swap notes with a whole horde of other such orders, issued by the vanished War Food Administration in its day.

While the regulation did not require the enrichment of white flour sold for family use, about three-fourths of this flour is at present enriched voluntarily, or in response to State laws. Incidentally no Federal law now makes such enrichment mandatory; the Food and Drug Administration has no such legal power or authority.

What was the effect of this wartime bread enrichment? Possibly we should first ask what food enrichment is.

When nutritive elements like minerals or vitamins are added to foods of which they are a natural constituent, but in which they occur sparsely, those foods are said to be enriched. When such elements are added to a food deprived of them in processing, and only in such an amount as to approximate natural composition, those foods are said to be restored.

When elements are added which do not naturally occur in the food at all, that food is said to be fortified. Finally, certain foods help enrich one another, as milk does cereals; such foods are said to supplement each other.

Today, as for years past, we ordinarily still eat pallid and tasteless bread, that is far inferior to what it might be from the standpoint of nutrition. For, in processing the wheat berry and making flour, the outer coat is removed. Along with it go seven-eighths of the thiamine and niacin the berry contains, three-fourths of the riboflavin, four-fifths of the iron, and considerable calcium and phosphorus. Besides all that, much protein of better quality than that in the heart of the grain is likewise cast aside for animal feed.

Riboflavin promotes growth, prevents the occurrence of sores at the corners of the mouth and allays certain facial eruptions. Thiamine helps us to use our fuel foods better. Niacin prevents pellagra. All are parts of vitamin B and all are important nutritionally. So what do we do?

We prepare these nutrients synthetically or from natural sources and then "restore" them to the wheat flour. It seems silly to take the trouble to remove nutrient elements from a product, then prepare them synthetically or otherwise, and add them back. But man never was a very logical or sensible animal and that is just what he does.

During the war we enriched about sixty-five percent of our flour and flour products. It remained white, fine, and of good keeping quality, but thiamine, riboflavin, niacin, and iron were added to it.

As a result the flour equalled whole wheat flour in thiamine, contained almost twice as much riboflavin as the whole-wheat product, but a little less niacin and iron, and considerably less calcium and protein, than the product of the whole berry. However, this product could be called enriched only as compared with unenriched white flour. For, as compared with whole-wheat flour, it was enriched only as to riboflavin, and was not even wholly restored as to the other nutrients mentioned.

During the war years the American people got more iron and B vitamins in their bread than at any time back to 1909, and probably long before. Enrichment of white bread and flour played an important role in this nutritional gain. Moreover the procedure was effective, practical, and economical. Ingredients to enrich all the bread and flour in the country would not cost more than eighteen cents per person. Fortunately, nineteen States, Puerto Rico, and Hawaii now have laws of their own providing for the enrichment of white bread and flour sold within their borders.

Cereals—of which wheat is but one—are good but not perfect foods. Most of them can be much improved by enrichment, fortification, or supplementation. Corn meal and grits are low in vitamins of the B complex, particularly the part that prevents pellagra. Enrichment by the addition of niacin and riboflavin makes them much better foods, and just such enrichment is now being carried on in many small southern mills.

Alimentary pastes like macaroni and spaghetti, as well as polished rice and processed cereals can all be restored to whole-grain levels of nutriment by adding vitamins, iron, calcium, and other substances. But, in some instances, fortification is necessary to improve a food.

Margarine is a good example. Its fats are quite as digestible and useful to our bodies as is butterfat. If anything, the margarine fats of today more closely resemble the fat of the human body in composition than does butterfat! However, butter contains vitamin A, needed for growth, reproduction, normal skin, good eyesight, and to prevent infections of certain mucuous membranes; it also contains some vitamin D.

The quantity of vitamin A in butter varies seasonally. In practice about 9,000 units of vitamin A per pound are added to fortify margarine and about ninety-nine percent of all margarine is so treated. It then becomes just as nutritious a food as butter; which one we eat is determined by taste and pocketbook. Moreover margarine contains some vitamin E, though perhaps this is less important than the vitamin D in butter.

Another example: Salt is often fortified with iodine by the addition of one part sodium or potassium iodine per 5,000 parts of table salt. This fortification proves highly beneficial in the goiter belt, where the soil is low in iodine. If you live in this belt you should use only iodine-fortified salt, unless your doctor advises against it. About half the table salt sold is now iodinized.

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While milk is a nearly perfect food, it is low in iron and in vitamin D. Though small quantities of vitamin D are present in the fat of egg yolk and cream and butter during the summer, we do not easily procure this vitamin in the diet, and milk fortification seems well justified. In the future it is to be hoped that the vitamin C of milk, now lost in pasteurizing and handling, may be preserved in the fluid, or that it can be restored.

Finally there is supplementation. Certain foods help enrich one another. For instance, very little dried milk or soybean flour will render wheat flour far more nutritious, by building up or supplementing the nutritional value of its proteins. Milk always adds excellent protein, calcium, riboflavin, and vitamin A values to grains. We have large potential supplies of skimmed milk, wheat germ, corn germ, soybean flour, brewers' yeast, and dried egg that could be added to other foods, thus enriching them naturally by adding good protein, minerals, and vitamins.

If the world food crisis had deepened sufficiently we might have been forced to eat whole-grain cereals. Thus we could have achieved greater vigor, increased length of life, and release from the higher foolishness of first removing nutrients from food products, then putting them back. Later, we might have had enough sense to continue eating whole grains for their superior taste and nutritive value. Even then a place would remain for the *supplementation, enrichment* and *fortification* of certain foods, though *restoration* might go out of fashion.
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Nervous Reactions

Seven, distinct, nervous reactions developed among the men who flew "the hump"—the air supply route from India to China across the Himalayas—during the war. Continuous service on this cloud road, probably provided the most severe strain endured by army air men, and a study of the observed symptoms, as reported to the Surgeon General's Office by Major William M. Jeffries of the Medical Corps, disclosed what might be expected when men are pressed toward the limit of human endurance. The fact that many showed no symptoms at all, Major Jeffries stressed, is a high tribute to the men who composed this force.

The "hump" route, as he described it, was over a series of high, jagged mountain ranges divided by rivers

flowing through precipitous gorges. There were no emergency landing fields. Much of the way was over Jap-held territory and storms frequently blew ships far off their course. Ice conditions were often bad, yet de-icing equipment had been removed from most planes. Flights were made at altitudes of from 17,000 to 35,000 feet, yet oxygen equipment was often inadequate; usually passengers had none. Landing fields were endangered by low ceilings and ground fog. Surrounding high mountains allowed no margin for error on instrumental landings. On the ground, heat and humidity were so great that clothing was constantly drenched with perspiration. Prickly heat was almost universal, sleep almost impossible, and there was a constant danger from snakes and insects. The combination of these factors, said Major Jeffries, was sufficient to shake the stability of some of the soundest individuals; a large number of psychological disorders developed, and it was remarkable that more were not encountered.

Psychiatric cases occurred in large numbers in Italy in the late winter and spring of 1944. This led to a clinical study of individual cases, and a study of the men exposed to the same stresses who showed no abnormal nervous reactions at all.

There is no such thing, the psychiatrists conclude, as "getting used to combat." In the North African Theater, for example, practically all infantrymen who were not otherwise disabled, ultimately became nervous casualties. There was a general agreement, between both medical and line officers, that two hundred days in combat, not necessarily continuous, represented about the limit of human endurance. By that time if a man had not definitely "cracked up", he had become so jittery that he was ineffective as a soldier and a demoralizing influence among his comrades.

The British, however, believed that a man could stand four hundred days combat, and attributed the difference to their policy of pulling an infantryman out of action at the end of twelve days or less for a rest of at least four days. American infantrymen in Italy frequently stayed in combat, continuously, thirty to forty days and occasionally as long as eighty days.

The report recommends that the limit of combat for any infantryman be two hundred and ten days; this only in an extreme emergency. It also urges that special recognition and privileges be given to infantry soldiers, that greater effort be made to indoctrinate soldiers and the categories and channels of evacuation be clarified for both line officers and medical officers; to the end that true malingerers will not be evacuated and severe psychoneurotics not retained in their combat units.

The war ended before recommendations of this report could be put into practice.

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Malnutrition Affects Over One-third of North American Population

Dr. Robert Goodhart, scientific director of the National Vitamin Foundation, recently revealed that more than one-third of the total population of North America suffers from malnutrition today despite advances made in the field of public health. He was addressing more than six hundred and fifty representatives of the wholesale and manufacturing drug industry gathered at the Palmer House for a special two-day mid-year meeting of the National Wholesale Druggists' Association.

"Of patients hospitalized for all reasons, two-thirds are afflicted with malnutrition," Dr. Goodhart stated. "However, all this evidence indicates that deficiency states certainly exist in a land of plenty, among people who think they are well fed."

Records show, he said, that the most prevelent deficiencies, roughly in order of incidence, are those of: Vitamin A, ascorbic acid (vitamin C), riboflavin (vitamin B_2), niacin, iron, vitamin D and calcium, and thiamine (vitamin B_1).

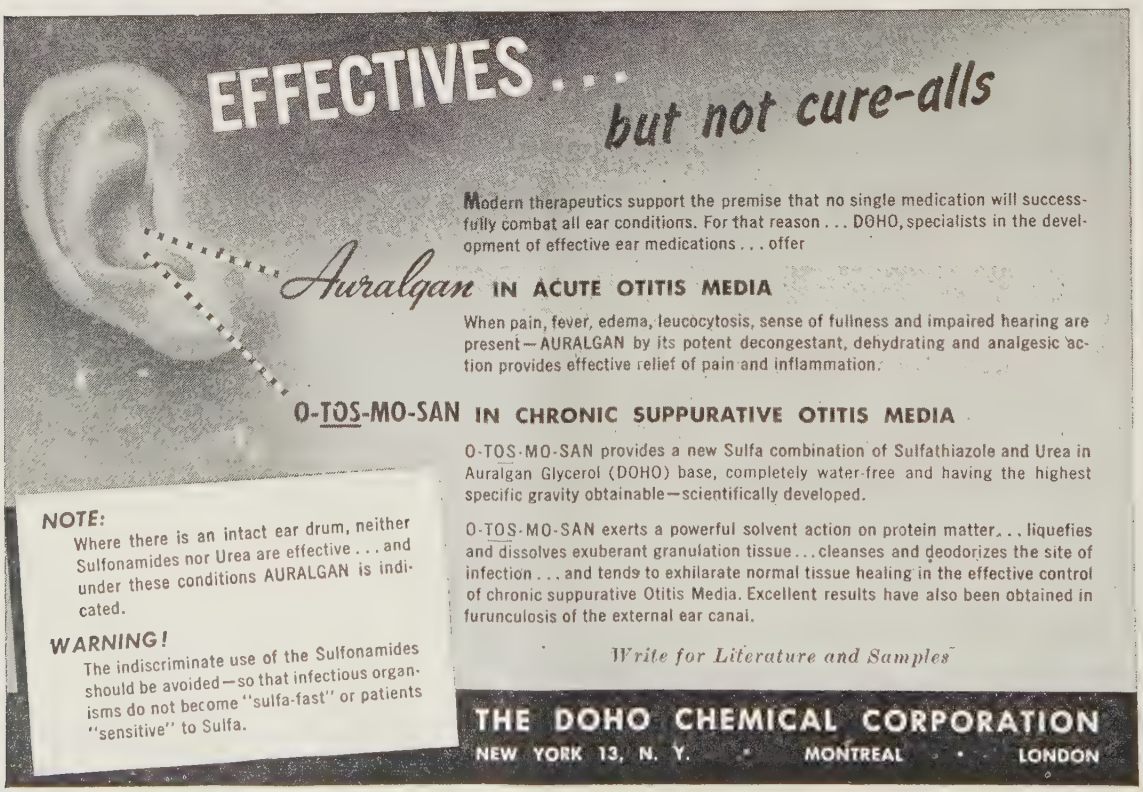
"In spite of the widespread knowledge of the relation of vitamin D to rickets present figures show that the prevalence of active and healed clinical records is approximately twenty percent among children of pre-school age. Such a condition surely should stimulate us to redouble our efforts in nutritional research," Dr. Goodhart continued.

Deficiency states here are predominantly mild, moderate or severe chronic forms, he explained. In frequency and severity they increase with age and with lowered economic level.

Following the talk delegates to the drug convention were shown the motion picture film "Strange Hunger," illustrating the effect poor nutrition has on health. Terming it technically one of the best films ever produced on the subject, Dr. Goodhart stated that it was based entirely on fact. It included an account of Dr. Conrad A. Elvehjem's discovery of the vitamin activity of nicotinic acid, and the results achieved by Dr. Tom Spies in the treatment of pellagrins at the Hillman Hospital in Birmingham.

Other sequence portrayed how pilots suffered less eye fatigue, school children learned faster, and factory workers produced more and were absent less, when additional vitamins were added to their diets.

Dr. Goodhart concluded by emphasizing the importance of continuing research on the physiology and pharmacology of nutritional substances, particularly vitamins. The National Vitamin Foundation, a non-profit, membership corporation which receives funds from members of the vitamin and allied industries, made substantial contributions in 1946 to research being carried on in ten universities and research institutions in the U. S., he said.



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Rheumatic Heart Disease

The crippling effects of rheumatic fever and rheumatic heart disease among school children, 7,000 of whom are estimated to be infected in New York City, will be the subject of a forthcoming study in the Lower East Side District by the New York University College of Medicine in cooperation with the New York City Health Department.

In an address before the annual meeting of Irvington House, which cares for approximately one-third of the city's rheumatic fever victims during the convalescent period, Dr. Henry E. Meleney, professor of preventive medicine of the New York University College of Medicine, said the study will get under full swing in the Fall. It is planned for a minimum period of three years, and will have the guidance of a Medical Advisory Committee from cooperating agencies.

"The ultimate objective of the study is to develop a program of efficient detection, follow-up and supervision, which may later be adopted on a city-wide basis by the Department of Health, through its School Health Service", Dr. Meleney said. "More specifically it will attempt to answer the following questions: How can cases best be brought to the attention of the School Health Service? How can the diagnosis be most easily and accurately verified? What administrative procedures should be followed in obtaining continuous medical care? How can this program be integrated with activities of existing community agencies?"

Dr. Meleney said the study will be directed by Dr. Elvira DeLiee (cq), of the Department of Preventive Medicine, New York University College of Medicine, who, with Dr. Charles A. R. Connor and Dr. Mortimer W. Weber conducted a preliminary study in 1946 in the same district. Eleven hundred and ninety eighth-grade children were examined at that time, and 39, or 3.3 percent, were found to have existing or potential rheumatic heart disease. Thirteen of the latter class were previously unknown to the School Health Service, Dr. Meleney pointed out.

The project has the financial support of the New York Heart Association and the United States Public Health Service. Other cooperating agencies include: New York City Department of Education, Rheumatic Fever Council of the American Heart Association, the U. S. Children's Bureau, the New York School of Social Work, the Metropolitan Life Insurance Company, and other departments of the New York University College of Medicine.

A preliminary educational program among school physicians, nurses, principals and teachers has already been started, Dr. Meleney added.

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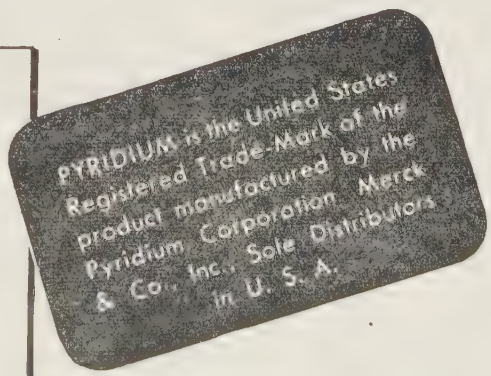

Hodgkins Disease Research Foundation

Formation of a new medical research group, The Hodgkin's Disease Research Foundation, was recently announced by Dr. Antonio Rottino, chief pathologist of New York's St. Vincent's Hospital, and first vice-president of the Foundation. Dr. Rottino stated that the organization has set itself a goal of two million dollars to be raised in 1947, to carry on laboratory research and operate clinics for treatment of the disease. Many theories have been advanced as to the cause of the disease, though to date little positive information has been available. Contemporary therapy has been successful only in prolonging temporarily the lives and ameliorating the suffering of patients.

In his initial statement at the press conference Dr. Rottino said: "The Disease which this foundation has undertaken to conquer has been known to medical science since 1661. However, it remained for Dr. Thomas Hodgkin, a British physician, to describe in 1832, a syndrome of the disease with sufficient clarity to permit its subsequent classification and analysis. The classification was accomplished by one of Dr. Hodgkin's students, a Dr. Wilks.

"Much research both here and abroad has been undertaken on the nature of Hodgkin's Disease, but until now no concerted, organized attempt has been made to eradicate it.

"The Hodgkin's Disease Research Foundation proposes to accomplish this task through the following methods: a. The establishment of an adequately equipped and staffed medical research laboratory devoted exclusively to Hodgkin's Disease. b. The establishment throughout the United States of additional clinics for the treatment of the disease and for the observation of Hodgkin's sufferers. c. The setting up of a clearing house for the exchange of information on the disease with other research laboratories and clinics throughout the world."

In addition to Dr. Rottino, officers of the organization include: Dr. Robert Chambers, professor of research biology, New York University; Dr. Herman Hoster, director of cancer research, Ohio State University; Prof. John F. X. Finn, School of Law, Fordham University, and Dr. Harry A. Rolnick, physicist, of Philadelphia.

Members of the Advisory Board are: Dr. Charles A. Doan, dean of the school of Medicine and director of research, Ohio State University; Dr. Lloyd Craver, chief of medicine, Memorial Hospital, New York City; Dr. Henry Jackson, Jr., Mallory Institute of Pathology, Boston City Hospital and Dr. Thomas Rivers of the Rockefeller Institute.

Officers of the Foundation said that contributions to further the work of the new organization should be sent to The Hodgkin's Disease Research Foundation, St. Vincent's Hospital, New York City.

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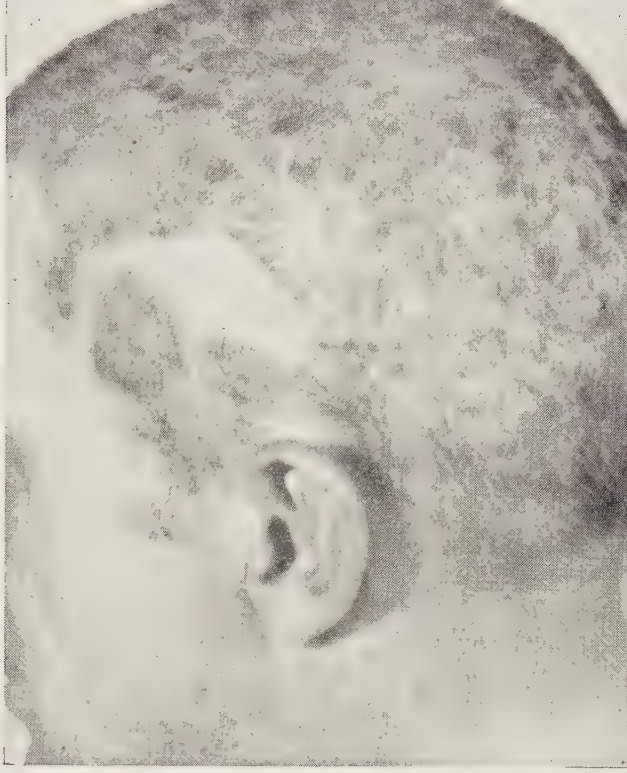

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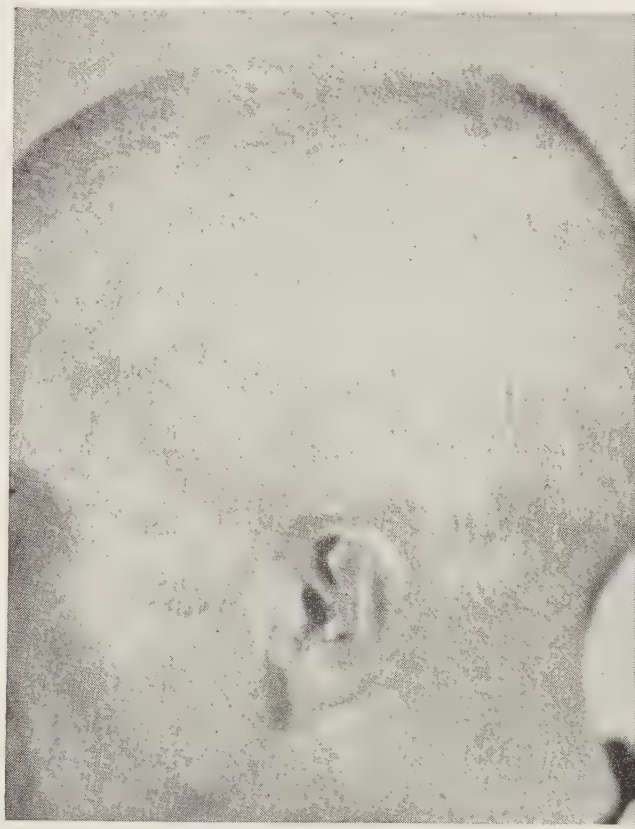

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NATIONAL RESEARCH COUNCIL
Washington, D. C.

In 1929 with the funds provided by the Rockefeller Foundation the National Research Council, through its Committee on Drug Addiction, undertook a coordinated program to study drug addiction and search for a non-addicting analgesic comparable to morphine. The principal participating organizations were the Universities of Virginia and Michigan, the United States Public Health Service, the Treasury Department's Bureau of Narcotics, and the Health Department of the State of Massachusetts, which brought together chemical, pharmacological and clinical facilities for the purpose of the study. Metopon is one of the many compounds made and studied in this coordinated effort.

Chemically, Metopon is a morphine derivative; pharmacologically it is qualitatively like morphine even to the properties of tolerance and addiction liability. Chemically, Metopon differs from morphine in three particulars,—one double bond of the phenanthrene nucleus has been reduced by hydrogenation; the alcoholic hydroxyl has been replaced by oxygen; and a new substituent, a methyl group has been attached to the phenanthrene nucleus. Studies made thus far indicate that pharmacologically Metopon differs from morphine quantitatively in all of its important actions,—its analgesic effectiveness is at least double and its duration of action is about equal to that of morphine; it is nearly devoid of emetic action; tolerance to it appears to develop more slowly and to disappear more quickly and physical dependence builds up more slowly than with morphine; therapeutic analgesic doses produce little or no respiratory depression and much less mental dullness than does morphine; and it is relatively highly effective by oral administration.

In addition to animal experiments these differences have been established by extensive employment of the drug in two types of patients,—individuals addicted to morphine, and others (terminal malignancies) needing prolonged pain relief but without previous opiate experience. In morphine addicts, Metopon appears only partially to prevent the impending signs of physical and psychical dependence. In terminal malignancy, administered orally, it gives adequate pain relief, with very little mental dulling, without nausea or vomiting and with slow development of tolerance and dependence.

The high analgesic effectiveness of oral doses (with the elimination of the disadvantage to the patient of hypodermic injection), the absence of nausea and vomiting even in patients who vomit with morphine or other derivatives, the absence of mental dullness and the slow development of tolerance and dependence place Metopon in a class by itself for the treatment of the chronic suffering of malignancies, and it is for that purpose exclusively that it is being manufactured and marketed.

Metopon will be available *only* in capsule form *for oral administration.* The capsules will be put up in bottles of 100 and each capsule will contain 3.0 mgm. of Metopon hydrochloride. They can be obtained by physicians only from Sharp & Dohme or Parke, Davis & Co., on a regular official Narcotic Order Form, which must be accompanied by a signed statement supplying information as to the number of patients to be treated and the diagnosis on each. The drug will be distributed for *no other purpose* than oral administration for chronic pain relief in cancer cases.

The dose of Metopon hydrochloride is 6.0 to 9.0 mgm. (2 or 3 capsules), to be *repeated only on recurrence of pain,* avoiding regular by-the-clock administration. As with morphine, it is most desirable to keep the dose at the lowest level compatible with adequate pain relief. Therefore, administration should be started with two capsules per dose, increasing to three only if the analgesic effect is insufficient.

Tolerance to any narcotic drug develops more rapidly with excessive dosage and under regular by-the-clock administration. Also, as a rule, the pain of cancer varies widely in intensity from time to time. Pain, therefore, should be the only guide to time of administration and dosage level. Tolerance to Metopon hydrochloride develops slowly. It can be delayed or interrupted entirely by witholding the drug occasionally for twelve hours or for as much of that period as the incidence of pain will permit.

To each physician will be sent a record card for each patient to whom Metopon hydrochloride is to be administered. He will be requested to fill out these cards and return them in the addressed return envelope. He must furnish this record of his patient and his use of Metopon hydrochloride if he wishes to repeat his order of the drug. The principal object of this detailed report is to check the satisfactoriness of Metopon hydrochloride administration in general practice. The physician's cooperation in making it as complete as possible is earnestly solicited.

The limited use of Metopon hydrochloride as described above has been recommended by the Drug Addiction Committee of the National Research Council and the Committee with the cooperation of the American Cancer Society, will supervise the distribution of the drug. The Committee is composed of Wm. Charles White, Chairman, Washington, D.C.; H. J. Anslinger, Commissioner of Narcotics, United States Treasury Department, Washington, D.C.; Lyndon F. Small, National Institute of Health, Washington, D.C.; and Nathan B. Eddy, National Institute of Health, Washington, D.C. Queries and comments on Metopon may be directed to Dr. Eddy, who will answer them for the Committee.

(*Continued On Page* 422)

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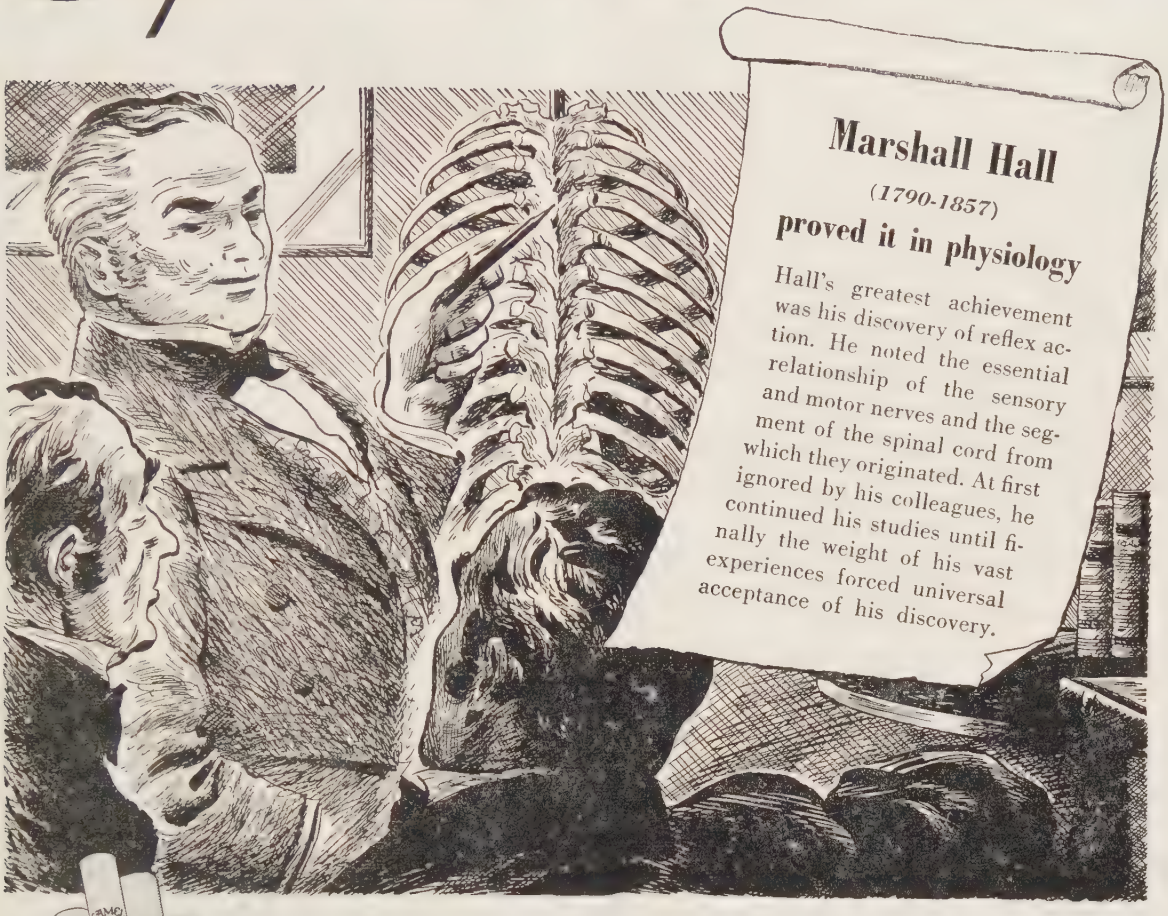

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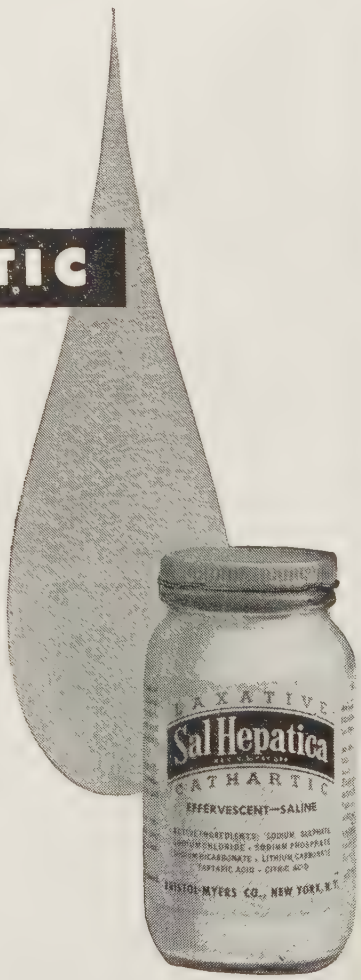

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MYOCARDITIS IN VIRUS DISEASES OF MAN

ERNST LYON, M. D.
Jerusalem, Palestine

Virus diseases are characterized by a special kind of biological symbiosis between the host and the microorganism, distinguished in a number of features from that existing between host and bacterium or protozoon (Hoering). An important common characteristic is the special affinity between the virus and certain cell systems in the host organism, and the various virus diseases depend in their manifestations on the specific organotropism or cytotropism they display. In accordance with this, the individual virus diseases are characterized by involvement of certain organs or cell systems of the body, thus giving rise to characteristic lesions. The symptoms displayed by the disease depend on the organ in which the virus is likely to settle, *e. g.* in the epithelial surfaces (dermatotropism) or in the central nervous system (neurotropism) or in both. Other viruses show a special affinity to the liver, the salivary glands, the lymph nodes, the lungs, etc. But there are panorganotropic types, too. Elective involvement by a virus, of the heart was found by Helwig and Schmidt in the form of lethal myocarditis in antropoid apes, mice, guinea pigs and rabbits. Such affinities are not absolute; the specific organotropism or cytotropism may become altered by certain infectional conditions or by transfer to other animal species.

Owing to the special sensitivity of the young organism, virus diseases are preponderantly contracted during childhood. Adults are usually protected by an acquired immunity. However, if no such immunization has taken place during their childhood, they may develop the disease in adult life when it runs a more complicated course.

In man, virus myocarditis usually does not occupy the center of pathological events and is, therefore, often overlooked. Wuhrmann points out that the aging of the heart is an important factor in the development of acute myocarditis. Age may certainly favor, especially if the heart is not completely intact, by a reduced resistance the development of acute, inflammatory processes within the myocardium. The same author was impressed by the relatively high incidence of myocarditis. The frequency of virus myocarditis at any age is surprising, too. During the past few years, clinical as well as pathologic-anatomical studies on virus myocarditis have become rather numerous, particularly those dealing with heart involvement after poliomyelitis, mumps, infectious mononucleosis and infectious hepatitis. These recent advances in our knowledge on virus myocarditis have made physicians increasingly conscious of the necessity for an accurate cardiac diagnosis and treatment in these diseases.

Myocarditis In The Individual Virus Diseases

In the following, a brief account is given of the anatomical and clinical data concerning myocarditis in the individual virus diseases.

Measles: The leading symptoms of measles are exanthema and the virus contained in the skin. Occasionally, the measles virus shows a certain affinity to the central nervous system and the lungs; cardiotropism is considerably less frequent. Albert found, in measles, microscopically inflammatory infiltration of the myocardium and Degen saw histological evidence of myocarditis, chiefly infiltration of lymphocytes and partially, but not predominantly, perivascular distribution. Myocarditis during or subsequent to measles has occasionally been suspected, clinically, by German authors and is being dealt with in their textbooks. Systematic electrocardiographic studies are not, however, available. Lyon described right bundle branch block of the (Wilson) left-type variety in a man forty-one years of age. The basis of this was traced to measles, which he had gone through two years earlier.

German measles: In this virus infection, too, the organs directly affected by the virus are the skin and the lymph nodes. Neurotropism and cardiotropism are more rarely encountered. Logue and Hanson described a case of complete heart block of short duration during the pre-eruptive stage of German measles. The virus is generally considered as one of low virulence. Whether it is capable of injuring the heart of the fetus in pregnancy, without however killing it, and therefore being the cause of congenital heart defect, is still undecided.

Variola: The variola-virus is dermatotrope, producing a vesicular exanthema on the skin. More rarely, it displays neurotropism (encephalomyelitis) but cardiotropism is the rule. Severe parenchymatous and fatty degeneration of the heart muscle has not only been observed as a remnant, but also in the early stages of the variola infection. Inflammatory changes in the myocardial interstitial tissue have also been reported. Involvement of the heart muscle is almost invariably responsible for the fatal outcome in all cases which are not otherwise complicated. If the patient recovers, it is almost exclusively the heart that remains affected. During the course of variola, the pulse becomes accelerated and its tension reduced. There may be disturbances of the heart rhythm of varying intensity.

Infectious mononucleosis: It appears from clinical and histological evidence that infectious mononucleosis constitutes a generalized virus infection with localization in one or more of the tissues and organs of the body. The most important feature, apart from changes of the blood picture, is the involvement of the lymph nodes. Hepatotropism, dermatotropism and neurotropism of the virus has also been observed. The cardiotropic tendency has, up to quite recently, received little attention. Only recently have electrocardiographic changes been described by Logue and Hanson, by Candel and Wheelock and by Lyon. In their cases, the electrocardiographic symptoms were heart block or abnormal terminal deflections. Wechsler, Rosenblum and Sills, examining two hundred and twenty-five soldiers with infectious mononucleosis, found fifty-three who had abnormal electrocardiograms (abnormal T-waves, prolonged PR-intervals and prolonged PR-intervals together with abnormal T-waves). Bradycardia and sinus arrhythmia persisted as long as the electrocardiographic changes were demonstrable and occasionally even longer. A systolic murmur was audible in twenty-two cases; it was usually loudest over the apex and of short duration. The virus of infectious mononucleosis displays its cardiotropic character much more frequently than usually assumed. Evans and Graybiel recorded, in four among one hundred patients with infectious mononucleosis, some cardiac complications. On the strength of their clinical and electrocardiographic observations they suspect that the pericardium rather than the myocardium is the chief site of involvement. In our experience, too, pericarditis may occur in the course of infectious mononucleosis, though rarely, and should be taken into differential-diagnostic consideration.

Infectious hepatitis: The virus etiology of infectious hepatitis is a probable one. The main effect of the infection consists of extensive destruction of liver cells and inflammation, most prominent in the portal spaces. Fatty degeneration of the pancreas and spleen as well as nephrosis has been noted. Very exceptionally, the virus is a neurotropic one. Heart involvement is recently being reported in an increasing measure. H. Loeffler in a report dealing with fourteen deaths from infectious hepatitis, mentions changes of the heart in six patients. These changes consisted of dilation to both sides, particularly however, to the right, hypertrophy of the right ventricle, dilatation of auricles, circumscribed fatty degeneration of the myocardium and brown atrophy of the myocardium. Junet and Alphonse found as a late manifestation, perivascular infiltration in the heart muscle and fatty degeneration of muscle fibres. In one case of acute hepatitis, where the patient died on the second day of illness, Wood reported definite myocarditis, characterized by lymphocytes and mononuclear phagocytes. The evaluation of electrocardiographic findings during the most active period of infectious hepatitis meets with a certain amount of difficulty, since—as it has been pointed out by Meier—every case of jaundice may present lowering of the ST-segment and flattening of the T-waves in the electrocardiogram, which is however, likely to disappear as soon as jaundice subsides or even a few days before. They are probably an effect of the action of bile acids. Louis reports abnormalties of T and ST, further disturbances of the heart rhythm in twenty-four out of forty-seven cases of infectious hepatitis, which, in mild cases, he believes to be due to functional disturbances of the heart conduction and in severe cases, however, due to toxic and incretory factors. Hoagland and Shaw mention cardiovascular disturbances, particularly an abnormal rhythm and prolongation of the PR-interval in infectious hepatitis. Electrocardiographic changes (flattening of T-waves) which Dehn, Feil and Rinderknecht noted in nine students of medicine suffering from infectious hepatitis, are explained by these authors as due to histological changes of the myocardium.

Adler and Lyon, who made a detailed study of infectious hepatitis in eight cases out of a series of one hundred and fifty which occurred during the latest Palestinian epidemic, drew attention to the electrocardiographic changes they were able to register. All the patients described had developed subjective and objective heart symptoms, part of them during the acute stage of the disease, others immediately afterwards and still others after a long interval during which the patients had already resumed their usual activities. Subjectively, the patients complained of dyspnea, palpitations, an uncomfortable sensation of oppression on the chest, pain of an anginal nature and occasionally arrhythmia, too. All these patients were young adults. On physical examination, nothing of importance could be found concerning the heart. The electrocardiographic symptoms, however, showed all the characteristics of myocarditis, especially prolongation of the PR-interval, depression of the ST-segments, flat T-waves, altera-

tions of the P-waves and disturbances of the heart rhythm. In addition, the QT-interval was prolonged and in several cases there were very high T-waves. The two last-mentioned features have been interpreted as due to toxic effects. In some of the patients the cardiac damage was of a reversible, in others it was of an irreversible character. After the jaundice had subsided, it was by means of electrocardiography that the damage to the heart could be objectively established.

In infectious hepatitis, therefore, the heart is particularly likely to be affected if an earlier damage, *e g.*, infectious mononucleosis or an other infection has already left its mark on it.

Epidemic parotitis: In this disease the activity of the virus concerns all salivary glands, the pancreas and the sexual glands. Neurotropism (encephalitis) has also occasionally been observed. Since 1900, myocarditis has repeatedly been reported as an accompaniment of mumps. Electrocardiographic abnormalities in one case have been reported by Wendkos and Noll. The electrocardiographic manifestations observed by Rosenberg in sixteen out of a total of one hundred and four patients, indicate that myocardial involvement is no rare event during the course of epidemic parotitis in adults. The following electrocardiographic changes are encountered: diphasic or inverted P-waves in one or several leads, prolongation of the PR-interval, alterations of the ST-segment and inversion of T-waves. Electrocardiographic evidence of myocardial involvement appears between the fifth and tenth day of illness. It is usually transitory, but may occasionally persist for from two to five months. In several patients the cardiac symptoms became manifest and there was precordial pain, either alone or with dyspnea and palpitations. The recognition of this myocardial involvement depends chiefly, if not exclusively, on electrocardiographic studies. The electrocardiographic changes in epidemic parotitis are usually mild and reversible.

Poliomyelitis: Chiefly affected by the poliomyelitic infection are the cells of the anterior horns of the spinal cord, owing apparently, to the settling of the virus in this organ. Cardiotropism is, however, no rare event. This myocarditis is histologically characterized by foci of perivascular infiltration of lymphocytes and neutrophiles (Saphir and Wile, Saphir, Wile and Reingold, Dublin and Larson, Peale and Lucchesi). The sudden death of a number of patients may be attributed to myocarditis (Saphir and co-workers). In poliomyelitis the pulse is often accelerated, more so than would have been in accordance with the level of temperature. Such an accelerated pulse may persist for weeks after the temperature has returned to normal, accompanied occasionally by abnormalities of rhythm and a lowered blood pressure. In severe acute cases of myocarditis, there is cyanosis and enlargement of the heart, while electrocardiographic changes are insignificant. The possibility of an early myocarditis should always be kept in mind when dealing with a case of poliomyelitis. Occasionally, electrocardiographic symptoms can be observed many years after the poliomyelitis process itself has healed. In a man, who had gone through a severe poliomyelitis in his youth and who had since then never been ill again, intra-auricular and intraventricular disturbances of conduction could be ascertained after as many as nineteen years.

Encephalitis lethargica: Diffuse, non-purulent encephalitis lethargica, which is now generally regarded as a virus disease, offers, according to v. Economo, a rather typical anatomical aspect which is very similar to that of poliomyelitis. Data on myocarditis in encephalitis lethargica are scarce. According to the above author, "as a matter of course, in exceptionally severe cases myocardial degeneration may supervene". Ungar, of the Institute of Pathological Anatomy and Histology of the Hadassah University Hospital in Jerusalem, saw a case of diffuse acute myocarditis in a man sixty-five years of age, who had died on the fourteenth day of encephalitis lethargica. The histological picture was characterized by foci chiefly composed of lymphocytes (personal communication).

In encephalitis lethargica the pulse rate is usually about 100 per minute, even if the temperature is low or moderately elevated, while bradycardia is rarer. In both cases, however, the blood pressure is likely to drop during the acute stage of the disease. Staehelin and Loeffler were also able to demonstrate a disturbed conduction in one case. Paroxysms of tachycardia have also been observed. Cardiotropism, no doubt, is also present in cases which run a chronic-progressive course accompanied by Parkinsonism. In approximately fifty percent of cases, in addition to degenerative cerebral changes, there may be quite fresh, inflammatory, encephalitic lesions in great number. Probably, the virus is not only capable of remaining in the central nervous system for years, but does so in the heart, too. In chronic cases, paroxysmal tachycardia is no rare event.

Herpes zoster: So far, nothing is known about the virus which produces herpes zoster, and it has even been assumed that different viruses may be able to produce this infection. Cardiac symptoms in herpes zoster have been described by Gais and Abrahamson. In four cases the common symptoms were precordial pain; in two cases the pain radiated down the left arm and was accompanied by dyspnea and alterations in the cardiac rhythm. The cases have not, however, been exhaustively studied. Further investigations will be needed before the true nature of the heart complications can be decided.

Influenza: Many of the features of the disease suggest that it is caused by a virus. Wuhrman, reviewing his own cases and those he collected from the literature since 1890, of acute interstitial

myocarditis after influenza, reports a fatal outcome during the period of convalescence without any warning, in a great number of them. Myocardial lesions as the result of infection by the influenza — A virus have been reported by Finland *et al.*

Primary atypical pneumonia: Primary atypical pneumonia is an influenza-like virus disease. It is occasionally accompanied by acute myocarditis with electrocardiographic alterations (Painton, Hicks and Hantman). Some of these electrocardiographic changes had but a temporary existence for a period of several weeks or months before return to normal, others showed changes which persisted through three months of observation.

Psittacosis: Related to influenza is psittacosis. The virus of this disease displays pneumotropism, dermatotropism and neurotropism. Cases running a severe course or even ending fatally are characterized by cardiac and circulatory failure. Death usually occurs between the tenth and twelfth day of illness. Even if recovery takes place, there is always a considerable degree of cardiac muscular insufficiency (postinfectious myocardial degeneration — (Adamy) which may extend far into the period of convalescence. Wühman described a case of psittacosis with pulmonary inflammation in a man forty years of age, in whom acute interstitial myocarditis, which terminated fatally, supervened at a fairly advanced stage. The patient had already overcome the general infection but electrocardiographically, the flat T-waves were suggestive of myocarditis. According to Adamy it is the circulation that should especially be taken care of when dealing with psittacosis.

Yellow fever: In this disease, the virus shows affinity to a number of organs (liver, kidneys, brain). A constant finding is acute myocardial degeneration (Cannel) but inflammatory changes have also been observed in the myocardium. Clinically, the cardiotropic effect becomes evident from the dilation of the heart, weak, soft heart sounds, disturbances of the rhythm and lowered blood pressure. In Cannel's opinion, this damage to the heart is not of a purely transitory nature nor is it limited to the acute phase of the disease. Death may occur suddenly when the patient is already convalescing. The cardiac disturbances are also evidenced by electrocardiographic findings.

Dengue fever: The virus of Dengue fever causes degenerative changes of parenchymatous organs as well as in the capillary endothelium with occasional hemorrhages. It displays dermatotropism, more rarely neurotropism. In the onset stage, the pulse may be accelerated but is likely to slow down. In certain epidemics, an early onset of bradycardia has apparently been noted. Wakil and Hilmy reported deaths from cardiac complications in the Cairo-epidemic of 1937.

Summarizing Description of Virus Myocarditis

Myocarditis accompanying virus disease may be of different degrees, ranging from severe fatal myocarditis during the acute stage of the virus infection, to a sudden fatal outcome during the period of convalescence. Histologically, — as far as postmortem data have become available — the picture is either one of interstitial myocarditis with lymphocytic, more rarely leucocytic infiltration, occasionally perivascular in distribution, or of degenerative changes in the muscular fibrils of the heart; usually both types occurring jointly with one of them predominating. A postmortem verification of a cardiac diagnosis should be demanded in every case of death from virus disease, since a clinical suspicion of myocardial involvement can only be corroborated by a thorough histological study of every portion of the heart. Inflammatory lesions seldom spread over the heart muscle as a whole. The myocardial involvement in certain virus diseases is of an insignificant degree, mild and reversible and its histoligical manifestations so far unknown.

Clinically, severe myocarditis may be suspected during the course of any virus disease. Sudden collapse, pallor, cyanosis and tachycardia out of proportion to the temperature, should make one suspicious. The blood pressure is usually low. The electrocardiogram sometimes reveals normal conditions, or insignificant changes. A rapid lethal course after apparent improvement is not unusual.

In mild cases of virus myocarditis—as it is especially the case in connection with mumps, infectious hepatitis, infectious mononucleosis—subjective signs on the part of the heart may be altogether absent or may be insignificant. Recurrent precordial pain or discomfort either alone or in association with dyspnea and fatigue are often noted and so is breathlessness in acute cases. Slow recovery from virus disease and complaints of asthenia are typical. Elevation of temperature may be present but not necessarily so. The heart is not, as a rule, enlarged and, if so, this may be a transitory occurence which may disappear suddenly. Systolic murmurs of low intensity may also be present, these are characterized by their variability; one day being heard over the apex or the base of the heart and having completely vanished on another. The pulse may be accelerated and irregular but not necessarily so. Sedimentation of red blood corpuscles may be accelerated but is often normal, too. Electrocardiographic findings are distinguished by their variable character if recorded at sufficiently frequent intervals. Virus myocarditis does not necessarily develop during the first days of illness, but may be noted during the acute stage or even during convalescence. Recovery from virus myocarditis may either be rapid or slow.

Cardiac scars, fibrosis circumscripta cordis, need not produce any symptoms at all. Patients may, however, occasionally complain of various cardiac sensations such as anginal manifestations, or paroxysmal tachycardia. The size and the sounds of the heart are normal. The sedimentation rate is, in connection with this condition, invariably normal. The myocardial damage developing during the course of the disease or after subsidence of acute symptoms, have been referred to as *myodegeneratio cordis* by v. Economo, in connection with encephalitis lethargica and by Adamy in psittacosis. It should, however, be borne in mind that the process may also be an inflammatory one of the interstitial myocardium.

The Electrocardiogram in Virus Myocarditis

The characteristic electrocardiogram of myocarditis is brought about by a functional disturbance of myocardial cells. Histologically, the process consists of interstitial, often "perivascular" and toxic-degenerative changes of the heart. Interstitial myocarditis also involves the muscular fibrils.

Electrocardiographic manifestations of a transitory nature may owe their existence to toxic effects, although clinically no distinction can possibly be made between toxic and inflammatory changes. In the presence of acute interstitial myocarditis, as it occurs in anterior poliomyelitis and terminates fatally within a few days, the insignificance or even absence of electrocardiographic symptoms, which is in contrast to the intensity of anatomical findings, indicates that death occurs before the muscular fibrils can become affected to any considerable degree. Permanence of electrocardiographic findings can be expected when inflammatory lesions have been converted into patches of fibrosis, often along the conduction pathways. The syndrome of Wolff-Parkinson-White may, in exceptional cases, be caused by circumscribed myocardial lesions as the consequence of an acquired, abnormal ventricular center of stimulation after myocarditis (cf. Holtzmann). Rosenberg reported on this syndrome in a case of epidemic parotitis but was also of the opinion that he was dealing with a congenital anomaly.

The electrocardiographic manifestations of virus myocarditis can be summarized as follows: The PR-and QT- intervals are prolonged, there are abnormal P-and T-waves, intraventricular block, abnormality of the QRS-complex and the T-segment, abnormal axis deviation, arrhythmia and tachycardia. In the majority of cases, electrocardiographic changes are the result of lesions in the ventricular wall, more rarely in the conduction system and very exceptionally of the coronary arteries. There may also be a combination of all these sites. There is no parallelism between the intensity of electrocardiographic findings and the degree of anatomical heart damage.

Differential Diagnosis

Saphir and Wile emphasize the non-rheumatic nature of the infiltrations found by them after poliomyelitis. The history gives no indication of a previous rheumatic fever in cases of this kind either. Rosenberg conducted a clinical study of the differential diagnosis against rheumatic fever in connection with mumps and with infectious mononucleosis by Wechsler, Rosenblum and Sills. The authors point out that the significance of a prolongation of the PR-interval in rheumatic fever is usually overestimated. It is not specific for rheumatic fever. Quite a number of virus diseases are able to produce the prolonged PR-interval, which is reversible in many instances, while in others it becomes permanently established but is compatible with good cardiac function. Saphir and Wile further emphasize the fact that bronchopneumonia which is rather common in poliomyelitis is not responsible for the production of myocarditis. The question has been put by Rosenberg, Lyon, Wechsler *et al*, and Painton *et al*, whether a possible subclinical streptococcal infection might be responsible for myocarditis in virus diseases. Although the possibility that streptococci may play an etiological role, too, cannot be altogether discarded, it is very improbable that virus myocarditis should be caused by streptococcal infection throughout.

Conclusions

Wuhrmann, Saphir *et al*, conclude from their experience that myocarditis would be found much more frequently if histological examinations of the heart were more thorough. Anatomical as well as clinical and especially electrocardiographic evidence goes to prove that myocardial damage is rather frequent in virus disease particularly poliomyelitis, epidemic parotitis, infectious mononucleosis and infectious hepatitis. It may make its appearance during the acute stage of the disease or during convalescence. Sudden death is not unusual in the presence of myocarditis (influenza, poliomyelitis, psittacosis, yellow fever, etc.) The least suspicion of myocarditis should be the signal for a very thorough examination of the heart. Prolonged bed rest is indispensible. We agree with Wuhrmann that in the treatment of this heart condition neither digitalis nor strophantin have any effect at all, and that first of all care should be taken of the peripheral circulation by administrations of coramin, cardiazol, sympathol, caffeine. In mild cases bed rest and a light diet with sufficient vitamins will suffice and is of greater value than most drugs. The rapid normalization of a possibly existing vitamin B and C deficiency is indicated. If the vitamin supplies to the organism are inadequate, resistance to the infection is lowered.

The true nature of virus myocarditis will have to be the subject of future investigations. Although the causative agent for a number of virus

diseases is so far unknown, its effect on the heart has been studied. The present generation of physicians, as a general rule, does not attach great significance to infectious myocarditis and is, therefore, prone to conclude that virus myocarditis is of no great significance either. It was the object of the present study to submit the material on which our knowledge of virus myocarditis is based, so that everyone may form his own opinion. Further investigations should render it possible to gain a closer understanding of the reactivity of the heart in virus infection, and myocarditis developing in the course of such a disease may then be more readily and accurately diagnosed and the lives of more patients may be saved.

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MOTION SICKNESS AND ITS RELIEF

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One of the most striking features of modern civilization is the development of rapid and comfortable transportation facilities, which have resulted in a continually increasing volume of travel. The growth of air travel has been particularly dramatic. Instead of declining with the end of the war the rate of increase has been accelerated, as is shown by the following figures.

Between 1940 and 1945, the total number of revenue passengers carried by airlines operating under the flag of the United States increased from 2,944,666 to 8,146,792; in 1946 the figure leaped to 13,787,249. The total number of revenue passenger miles flown in 1940 was 1,152,421,580; in 1945 it was 3,960,075,691; and in 1946 it reached 5,947,048,691. These figures include both domestic and international flights. At the present time several organizations have agreed in estimating that in 1947 domestic airlines will carry a total of 18,000,000 passengers and that the passenger miles will reach a figure between 7,000,000,000 and 8,000,000,000.

International air transportation, the most recent major development in the field of travel, is also one of the most flourishing. For example, in the course of a single recent month, La Guardia Field alone received or dispatched 1400 international air flights with nearly 25,000 passengers.

Travel by rail in the United States showed a slight decrease in 1945 from the wartime peak of 1944, but the number of passenger miles performed by Class I railways was 91,744,976,193. This is more than double the record of any year prior to World War II.

As for travel by sea, there are many indications that the tourist tide, which reached such vast proportions in the decades preceding the

last war, will again set in as soon as world conditions permit. A writer in the *New York Times* recently expressed the opinion that by the end of the present year Atlantic traffic will begin to recall that of pre-war days.

In view of the obvious trend to an increase in travel, and particularly in travel by air and sea, the prophylaxis and treatment of motion sickness will be a problem of growing importance to physicians. Fortunately, much new knowledge on the subject has been made available in recent years. The conditions under which the late war was fought focussed attention upon the prevention of seasickness and airsickness in the American and British armed forces and at the same time made possible controlled experiments of a type and on a scale which could scarcely have been carried out with civilian travellers. A survey of these studies, against the background of previous work on the subject and of the present author's personal experience, leads to the definite conclusion that motion sickness can be controlled in a large majority of cases, by suitable medication.

Incidence of Motion Sickness

The term "motion sickness" is used to include seasickness, airsickness, train sickness and car sickness, for there is general agreement today that these states bear so close a relation to each other in etiology and fundamental character that they should logically be grouped together under one inclusive designation.

Many recent students of the subject have concluded that motion sickness is much more common than was formerly supposed. There is also a tendency to broaden the definition of the condition to include not only the well known manifestations of classic seasickness and airsickness but states characterized by headache, anorexia and malaise, which are frequently observed among travellers.

Schwab (1), on the basis of a survey of the literature and personal observations, arrived at the conclusion that about forty percent of any population group will become sick on a sudden exposure to rough weather at sea. Hill (2), who had had a long experience as a ship's surgeon, placed the incidence much higher. He stated that under severe conditions only twenty percent of unacclimatized persons will remain entirely free from seasickness.

Yanquell (3) studied the problem of airsickness for a year at a naval air station and concluded that "there is much evidence that airsickness is the rule rather than the exception among student aviators and passengers who fly infrequently." Almost one hundred percent of the student aviators questioned by Yanquell admitted that they had at some time suffered from some of the cardinal symptoms of airsickness or actually had been treated for this condition at the field dispensary. While some observers of air cadets do not agree with Yanquell's findings, the weight of opinion appears to be on the side of a high incidence of some degree of airsickness under unfavorable weather conditions or when strenuous aerial maneuvers are necessary.

With regard to motion sickness in general, Maitland (4), writes: "One may venture to say that with the exception of certain rare and mostly pathological cases, all normally constituted people are susceptible to some definite type of movement."

Causation of Motion Sickness

There continues to be some controversy as to the causation of motion sickness. A number of observers, among whom Keevil (5) may be cited as an example, believe the syndrome to be primarily of psychic origin. While psychological factors unquestionably play a part in a limited number of cases, the weight of experimental evidence and of general observation appears to be overwhelmingly against them as the primary element in most instances.

Experienced ocean travellers are aware that many persons who are fearful of seasickness remain well, while others who are confident of their own immunity succumb when rough weather begins. A clear cut example of this from the author's own experience may be mentioned. The patient embarked on her first trans-Atlantic voyage in a very apprehensive frame of mind with regard to seasickness. As it happened, the crossing was exceptionally calm and she experienced no discomfort. Not realizing how unusually fortunate she had been in regard to weather conditions she began her return voyage in the happy conviction that she was immune to seasickness. Unfortunately, the ship this time encountered rough weather on the first day out and within a very brief period the patient was extremely sick.

Also militating against the psychic theory is the fact that animals suffer from motion sickness. Seasickness has been observed with great frequency among monkeys, birds, poultry, and other animals. Fish being conveyed from the Galapagos Islands to the New York Aquarium were reported seasick by the scientific observers in charge of the expedition (6). Very recently the first member of the latest Byrd antarctic expedition to reach New York stated in a newspaper interview that penguins being brought back to America under his care suffered severely from seasickness. On a very short sail from Wood's Hole on Cape Cod to the island of Nantucket, where the water is often extremely rough, the author recalls that a bulldog and he suffered the utmost extremity of seasickness.

A theory which has won wide acceptance is that which places primary emphasis upon disturbances of the vestibular apparatus. Experimental evidence in support of this conception was furnished in 1931 by Sjöberg (7), who employed a mechanical device to determine the effects of motion upon four dogs, both before and

after destruction of the labyrinth. Before operation the dogs became sick after from eleven to twenty minutes of motion. Following recovery from the operation, three hours of motion in the same device failed to produce symptoms.

Further experiments by Sjöberg, however, indicated that there were additional factors in the causation of motion sickness. The role of the ocular system was evident from the fact that dogs were less susceptible to motion sickness after suturing of the eyelids. Placing the animals in a plaster cast so as to reduce the kinesthetic impulses also decreased their susceptibility.

Experimental evidence of the causative role of movements of the viscera was furnished by Lenggenhager (8), who found that subjective experience of motion sickness could be produced by rhythmically moving portions of the viscera after the abdominal wall had been opened under local anesthesia.

Other authors have stressed the role of the abdominal viscera in motion sickness. In reviewing the subject, Poppen (9) states that there are four mechanisms from which the stimulus for seasickness may arise: namely, the labyrinth, the somatic senses, vision and the higher cerebral centers. In the majority of cases more than one of these mechanisms are involved. In a given case, any one of them may be the primary factor; but Poppen holds that " by far the worst sinners are the somatic senses and of their several components the arch demon is that stimulated by the interplay of tensions and pressures between the abdominal viscera."

Schwab (1) sums up the opinion of many observers when he writes: "The wisest view is that various types of stimuli set off the syndrome and that different conditions in different individuals modify the picture."

Recent Clinical Experiments

Many drugs have been tried for the relief of motion sickness but those which have met with any considerable approval have fallen for the most part into one of two groups: 1, alkaloids of the belladonna group and 2, general sedatives.

As long ago as 1926 Desnoes (10), who was then Port Medical Officer of the United Fruit Company, wrote that in his experience the best results in seasickness were secured with scopolamine hydrobromide. In cases where the psychic factor was prominent, he advised the addition of a hypnotic. About a decade later, Keevil (5) stated that the only drugs whose use in seasickness rested upon a scientific basis were belladonna and hyoscine (scopolamine) and that in his opinion failure to obtain good results with these was due to inadequate dosage.

In the course of World War II the necessity of transporting large bodies of infantry in small landing craft, to be disembarked upon a hostile shore, made the prevention of seasickness a problem in military medicine. Similarly, the major importance assumed by aerial warfare focussed attention upon airsickness.

The first large-scale wartime study of motion sickness prevention reported was that of Holling and his associates (11). The experiments were conducted at sea during periods of rough weather. The drugs tested, either alone or in compounds containing various combinations, included scopolamine, atropine, hyoscyamine, barbiturates, amphetamine and chlorobutanol.

Many individual experiments were performed, each including about seventy soldiers. One hour before embarkation on minesweepers or trawlers, each man was given either a placebo or one of the drugs being tested. No significant placebo effect was noted. It was found that scopolamine caused a greater reduction in seasickness than did any other drug tried and the authors considered that their experiments fully established the effectiveness of this substance as a remedy for seasickness.

In men receiving 0.6 mg. of scopolamine the only side effect noted was a barely perceptible dryness of the mouth. With a dosage of 1.2 mg., dryness of the mouth was sufficient to cause some difficulty in chewing but was considered of minimal importance in comparison with seasickness. Careful observations were made on men carrying out strenuous military exercises after receiving scopolamine. No obvious effect on physical performance, ability to shoot or near vision was noted, nor was sweating diminished to a significant degree.

The most extensive comparative study yet reported of the effects of different types of medication in motion sickness is that of Tyler (12), who conducted sixty carefully controlled experiments involving more than 15,000 subjects, with the object of determining the best method of preventing seasickness during amphibious military operations. The dosages of the various drugs tried were based on separate experiments designed to determine the maximum amount of each drug which could be given safely to young men without interfering with their combat efficiency. In addition to the groups receiving medication, there were groups receiving placebos and also controls to whom nothing was given. As between the placebo and the control groups, there were no significant differences in the incidence or severity of seasickness.

The drugs tested included barbiturates, neostigmin compounds, scopolamine alone, and scopolamine in combination with other alkaloids of the belladonna group and with barbiturates. The neostigmin compounds had no demonstrable prophylactic effect. With all the other drugs tried, the incidence of seasickness was significantly less than in the placebo groups. However, the barbiturates given alone were effective only under circumstances in

which the placebo rates were low or moderate, indicating favorable conditions.

In contrast, scopolamine either alone or in combination with other drugs, had a high degree of effectiveness even under severe conditions. For example, in one experiment, when fifty-three percent of the placebo group were sick (the degree of sickness being severe in thirty-seven percent), the incidence of sickness in the group receiving scopolamine alone was twenty-seven percent, and only ten percent were severely sick. In an experiment under more favorable weather conditions, where the incidence of seasickness in the placebo group was twenty-eight percent, with eleven percent severely sick, only six percent of a group receiving scopolamine in combination with atropine and a barbiturate were sick in any degree and none was severely sick.

Still another extensive study of the prevention of seasickness in assault craft has been reported by Hill and Guest (13). More than 5,000 subjects were included in tests of the comparative efficacy of scopolamine alone, scopolamine plus amphetamine, scopolamine plus ergotamine, ergotamine alone and chlorobutanol. Scopolamine alone proved most effective. Hill and Guest estimated that "the degree of protection was of the order of four-fifths of those susceptible."

The efficacy of scopolamine in airsickness was thoroughly tested by Lilienthal (14), in an unselected group of aviation cadets. Lilienthal's figures are given in terms of cadet flights and are divided into the three following groups: five hundred and thirty-one control flights, in which nothing was administered; two hundred and thirty-nine cadet flights in which a placebo was given; and two hundred cadet flights with scopolamine medication. Analysis of weather conditions showed them to be generally similar for each group, but the scopolamine group was exposed to somewhat rougher weather than the others and the placebo group had the greatest number of smooth flights.

The incidence of airsickness in the control group was 7.5 percent and in the placebo group 6.3 percent. This difference was not considered significant. In the scopolamine group there was only one instance of airsickness (0.5 percent). On several very rough flights, all of the other members of the air crew (instructors, radio men, mechanics) who had received no medication were violently airsick, while the cadets who had been given scopolamine felt no unpleasant symptoms. Side effects were few and slight and did not interfere in the performance of the cadets' duties.

In addition to this study, Lilienthal administered scopolamine to twenty-eight men who suffered from chronic airsickness. Eight of these were experienced airmen, including five pilots, one navigator and one machinist's mate. The pilots were undergoing refresher courses involving aerial acrobatics. All gave a history of airsickness during previous training, with subsequent adjustment and no further symptoms until violent maneuvers were resumed. All eight of these experienced airmen suffering from chronic airsickness were completely protected by scopolamine. The remaining twenty subjects included in this phase of Lilienthal's study were inexperienced and psychic factors were prominent in some instances. The results of scopolamine in controlling chronic airsickness were less uniform in this group than in the eight experienced subjects, although the results on the whole were good.

In view of the scope and thoroughness of the experiments cited, the effectiveness of scopolamine in controlling motion sickness appears to be fully established. The exact mechanism of its action has not been fully worked out but it is presumed to rest upon 1, its sedative and tranquilizing central effects and 2, its action as an antagonist of acetylcholine. Among its anticholinergic effects, the power of inhibiting excess motility of the gastrointestinal tract appears to be of major importance in motion sickness.

Scopolamine Aminoxide Hydrobromide

The hydrobromide is the most widely known and generally employed of the salts of scopolamine. For use in motion sickness, the partially detoxicated aminoxide of this salt appears to possess distinct advantages. This is *scopolamine aminoxide hydrobromide*, which was first prepared in France in 1925 and which has been studied both pharmacologically and clinically in America in recent years. It is now available in a form convenient for use in motion sickness under the name of *Scopodex Pellets*.

The therapeutic potentialities of scopolamine aminoxide hydrobromide are identical with those of the alkaloid from which it is derived but the toxicity of the aminoxide is far less than that of the parent substance. In addition, the duration of its action is much briefer—a desirable attribute in the treatment of conditions such as motion sickness.

Laboratory studies of the comparative toxicity of scopolamine hydrobromide and of the aminoxide have been reported by Co Tui and Debruille (15), who used the minimum lethal dose in white mice as the criterion. The minimum lethal dose (defined as the point where half of the treated animals died) was found to be .5875 mg. per gram of body weight for scopolamine hydrobromide and 3.325 mg. per gram for scopolamine aminoxide hydrobromide. This indicates that the aminoxide possesses only about one-sixth of the toxicity of the parent substance.

The comparative effectiveness and duration of action of the two salts were also tested by Co Tui and Debruille. They concluded that the aminoxide was one-third as potent as sco-

polamine hydrobromide. Since it is only one-sixth as toxic, it is obvious that the same therapeutic effects may be obtained with far less risk of undesired reactions.

In isopotent doses, the duration of effect of the aminoxide appeared to be about one-third that of scopolamine hydrobromide. This would seem to constitute a marked advantage in combatting airsickness, particularly on short flights, since full protection can be afforded for the desired length of time without after-effects. In longer air journeys and at sea, the briefer action of the aminoxide permits more definite therapeutic control with reference to weather conditions and the needs of the patient, since the effective dose may be repeated as needed without danger of cumulative toxicity.

Clinical evidence of the absence of toxic reactions from scopolamine aminoxide hydrobromide, even under continued administration of large doses, was afforded by the studies of Scharf (16), who employed the drug in treating twenty-two patients suffering from Parkinsonism. All had been under treatment for periods of from five to fifteen years with scopolamine hydrobromide, atropine sulfate or stramonium drops. As massive doses of these drugs became necessary, toxic effects were pronounced. When scopolamine aminoxide hydrobromide was substituted, it was found that the patients experienced significant symptomatic improvement, yet this was accompanied by no undesired reactions. The hot, flushed skin, dryness of the nose and throat, and blurring of vision produced by scopolamine hydrobromide and the other drugs formerly used cleared up completely when the aminoxide was substituted.

Conclusions

A survey of developments during recent years in the therapy of motion sickness indicates that scopolamine hydrobromide is an efficient agent for the prophylaxis and treatment of this condition.

Because of lower toxicity, high effectiveness and shorter duration of action, scopolamine aminoxide hydrobromide has definite advantages over the parent drug in the prophylaxis and treatment of motion sickness.

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IMPORTANCE OF VENOUS CONGESTION AND CAPILLARY STASIS IN THE PATHOGENESIS OF ARTHRITIS

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In a recent paper Meyer came to the conclusion that: "Arthritis is in most cases, the result of oral focal infection which causes jugular phlebitis and subsequently polyphlebitis in the peripheral veins. Inflammatory swelling of the inner lining of the veins (proliferative endophlebitis) interferes with the venous drainage of a joint, which results in a joint with venous congestion and seems to be the most important factor in the causation of arthritis. As any tissue with venous congestion becomes weak in its resistance against bacteria and bacterial toxins, it becomes predisposed to inflammation."

To understand the importance of venous congestion in the pathogenesis of arthritis, a clear conception of the normal joint is necessary.

The joint cavity is not a true body cavity as are the other body cavities (pericardial or peritoneal cavity).

All joint components are of mesenchymal origin.

The hyaline cartilage has no blood vessels and depends for nutrition on the synovial fluid.

In a joint we deal, from an embryological viewpoint, with a highly organized, enlarged tissue space which derives from a mesenchymal cleft in the cartilage (Fig. 1.)

Synovial fluid (humor articularis) is an example of tissue fluid in general.

Under normal conditions, the opposing forces of capillary pressure and osmotic pressure difference between blood plasma and synovial fluid

determine the volume of synovial fluid present. Since the synovial fluid conveys to the cartilage its means of existence, the nature and origin of synovial fluid are of prime physiological importance. The distribution of electrolytes and non-electrolytes between blood and synovial fluid and the marked vascularity of the synovialis (the so-called synovial membrane) indicate that the normal synovial fluid is a dialysate of blood plasma and is in equilibrium with the blood plasma. The numerous capillaries and venules of the synovialis are in close proximity of the articular lumen.

The concept of synovial tissue as a membrane analogous to the true body membranes (pericardium or peritoneum) should be discarded, because uninterrupted continuity exists between the intercellular fluid of the synovial tissue and the synovial fluid. Compared to true membranes, synovial tissue has a markedly greater permeability.

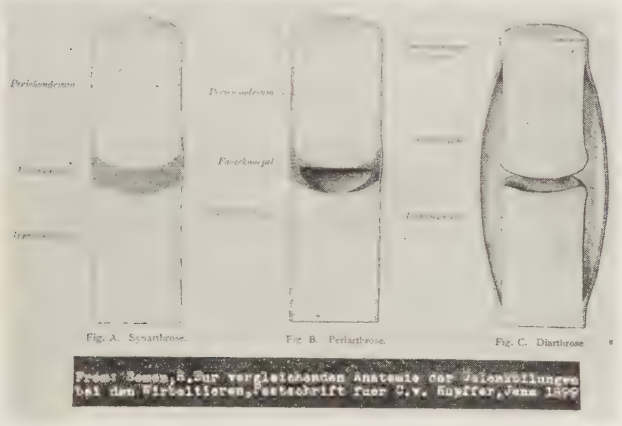

Fig. 1

Bauer and Bennett suggest that the socalled synovial membrane does not, accurately speaking, secrete synovial fluid, but acts as an osmotic filter between the articular blood vessels and the joint cavity.

It cannot be stressed enough that a joint is not a body cavity in the ordinary sense, but a highly organized enlarged tissue space. While true body cavities are lined with mesothelium, the so-called synovial membrane is lined with desmothelium.

The conception of a joint as a highly organized, enlarged tissue space is of fundamental importance, because all tissue spaces are in intimate exchange with the systemic blood circulation. The exchange equilibrium between a tissue space and the systemic circulation can be easily deranged by disturbance in the circulatory dynamics.

The close relationship between the systemic circulation and the joint cavity is proven by the fact that intravenously injected substances appear in a short time within the joints. Substances injected into the joint lumen appear soon in the efferent venules.

Resorption of small molecules from a joint, takes place almost entirely by way of the blood vascular system and only to a slight degree through the lymphatics, while the larger molecules are removed with difficulty and only by way of the lymphatics.

Deviation from normal joint physiology consists chiefly in alteration in the synovial tissue and changes in intraarticular metabolism. While the former leads to quantitative and qualitative disturbances in the exchange equilibrium, the latter results mainly in difficult supply of nutrition to the cartilage. Cartilage has no blood vessels and therefore shows little or no tendency to regenerate. In contrast to the cartilage, the synovial tissue with its marked vascularity has a pronounced and undisputed regenerative ability.

When we consider the importance of a normal circulation for the normal function of a joint, it is difficult to understand why the vascular factor in the pathogenesis of arthritis was so much neglected. The arteries were discussed in connection with arthritis, the veins very little and the capillaries hardly at all, although the body contains 60,000 miles of capillaries, and although the capillaries constitute the most essential part of the circulatory system, because interchange of substances between the blood and the tissues takes place in the capillaries.

Since venous congestion and subsequently capillary stasis are the deciding factors in the pathogenesis of arthritis, these conditions deserve the greatest attention.

The importance of venous congestion in arthritis was demonstrated experimentally in two ways.

Bernstein produced arthritis in distal joints by ligating proximal veins and so causing joints with venous congestion.

Other authors produced arthritis by the immobilization of a joint and the regional muscles with stiff plaster of paris bandages which prevented muscular contraction. Since the return of the venous blood is largely dependent on muscular contractions, the result was a venous congestion in the joints and finally arthritis which resulted in ankylosis.

It is a common experience in medical practice that joints immobilized by plaster of paris bandages for a considerable time become stiff.

The function of a normal joint is dependent on normal circulation. Dysfunction of the circulation results at the start in functional disturbances of the joint and in later stages in structural changes of the joint. For this reason early recognition and treatment of circulatory disturbances are of great importance.

Since the general circulation and the circulation in the joints are so closely related, it is obvious that disturbances in the systemic circulation must disturb the function of the joint adversely.

Of special importance is the development of venous congestion within the joint and the peri-

articular region, which is due to impairment of the venous return in stenotic efferent veins.

Venous congestion which brings on stagnant anoxia has a very damaging effect on the capillaries. According to Landis, capillary stasis, which deprives the capillary endothelium of sufficient oxygen, is the most probable cause of the leakage of proteins.

In this connection it is interesting that Bauer, Hopes, and Waine found the protein content of the synovial fluid markedly increased in severe rheumatoid and septic arthritis.

The work of Landis has conclusively shown the great sensibility of endothelium to even a small elimination of oxygen supply.

Venous congestion results in increased pressure in the tissues which compresses the small arteries mechanically. The result is stagnant anoxia which is very harmful to tissues. It leads to degeneration and destruction of cells.

Petersen stresses the importance of oxygen supply when he states: "Variation of oxygen supply to the tissues is one of the most common of events and dysfunction and inadequacy of the mechanism that has to do with oxygen supply is probably the most fundamental cause of diseases."

From a rheological viewpoint, the viscosity of the blood is important. Accumulation of CO_2 in an area with venous congestion increases the viscosity of the blood and makes the flow of blood especially difficult in the capillaries.

Klinge, as a pathologist, considers rheumatism as a focogenic disease which produces in a sensitized body lesions of the entire mesenchymal tissue all through the body, especially in the vascular and connective tissue, and spares no organ. Klinge believes that bacterial toxins produced in a focus are the sensitizing agent.

Pemberton and Osgood believe that a focus of infection which has long harbored a more or less virulent organism may induce a state of sensitivity of the host as a whole.

In regard to arthritis, the condition is not so much one of infection as it is a reaction to infection. The emphasis belongs not on the specific organism, but on the specific reaction.

Allergic reactions are especially violent in areas with venous congestion.

In several papers the author has called attention to the phlebotropism of oral focal infections. All focal infections have a tendency to spread into the jugular veins. Recently Hueper confirmed this conception by producing experimental jugular phlebitis in dogs after he caused an abscess in a tooth.

Some authors express the opinion that a focal infection mobilizes the entire mesenchymal tissue, especially the endothelial cells in the blood vessels. They consider this mobilization of the connective tissue, especially of the venous endothelium, as a defense reaction of the body and believe that in the absence of sufficient resistance, or by constant irritation from a focus of infection, the seat of defense may become a seat of disease.

Focal infection can produce a generalized latent polyphlebitis. The narrowing effect of inflammatory swelling (phlebostenosis) of the inner lining of the vein produces venous congestion in distal regions which cannot be sufficiently drained.

Ceelen introduced the term "phlebitis productiva angustans" in order to stress the narrowing (angustation) of the lumen.

Chiari, in his book on the pathology of acute rheumatism, used an illustration of endophlebitis rheumatica. (Fig. 2).

Martin and Tull examined, on the basis of biopsies, the veins of rheumatic children and found a severe obstruction of the vein canal by proliferative tissue. In socalled growing pains we find that the deep veins of the legs are always very tender on deep palpation.

There are invariably signs of inflammation in the deep veins proximal to an inflamed distal joint. The diagnosis is made by deep palpation while the muscles are relaxed. Inflamed veins are very sensitive to pressure, while normal veins (*e. g.* dorsal hand veins) can stand a great deal of pressure without pain.

In arthritis of one knee, where there are no obvious symptoms, the patient can be told from the tenderness of the corresponding femoral vein, which knee is affected.

Since arthritis is in most cases, a symptom of latent phlebitis, the treatment of arthritis reduces itself to the complete removal of infectious foci and to the treatment of latent polyphlebitis.

The real starting point of oral focal infection seems to be in the small veins of the dental pulp and of the tonsillar tissue. Wassmund stresses the infection of the small veins of the pulp in dental focal infections. According to Bremer, the teeth have no lymphatic vessels. Therefore it is easy to understand that the spreading mechanism of dental infections occurs via the venous route. It is not generally realized that the teeth have a very rich supply of blood vessels.

Roessle and Siegmund, both pathologists, found endophlebitis in the small veins of infected tonsils. Siegmund stresses the importance of infected tonsillar veins in the mechanism of bacterial allergy. He states that in the infected tonsillar veins we have a clue as to how the sensitization of the whole body starts.

The author has made histological examinations of infected tonsil remnants and x ray negative teeth with large fillings, in both of which he could find signs of endophlebitis in the small veins of these organs.

The deciding factors in focal infection are the lack of drainage and the spread of the infection into the surrounding veins.

Due to the lack of drainage, infected tonsil remnants and residual dental infections are very dangerous.

In a paper on the incidence and significance of infected tonsil remnants, the author came to the conclusion that according to many authors complete tonsillectomies are rare, even if done by specialists.

Infected tonsil stumps are easily diagnosed by external palpation of the tonsillar fossae. The exploring finger feels an indurated mass. Local inspection of the tonsil area often shows nothing, as a harmless looking scar tissue covers a very dangerous focus of infection. Complete removal of infected tonsil remnants cannot be stressed enough in the treatment of arthritis. Street developed a special technique for the removal of infected tonsil remnants which was recently described by Sputh.

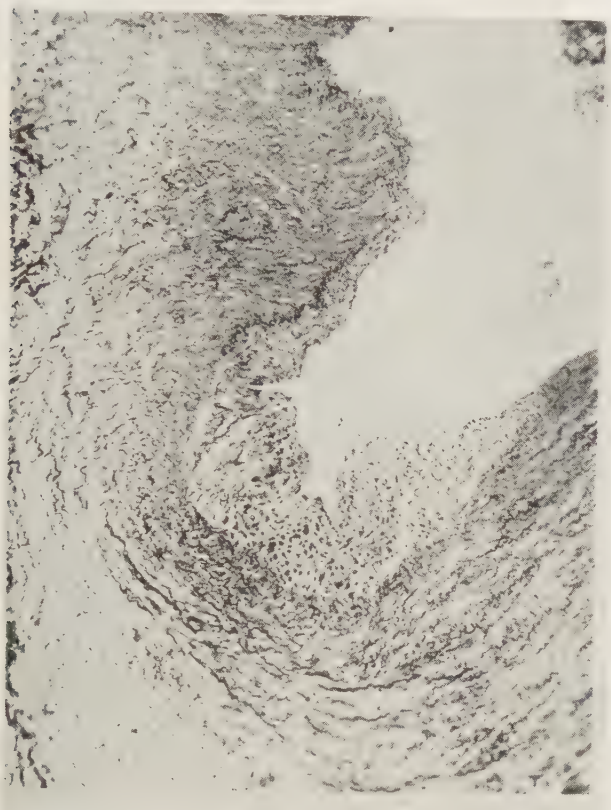

Abb. 16.

Endophlebitis rheumatica. Mittl. Vergr.

From: Chiari, H.,
DIE PATHOLOGISCHE ANATOMIE
DES AKUTEN RHEUMATISMUS,
Steinkopff 1938

Fig. 2

Fischer, Murray and O'Ferrell and Yoder stress the danger of osteitic and osteomyelitic foci of infection in the jaw bones after incomplete removal of a dental focus. Often an infected tooth is removed and the infection in the surrounding jaw bone remains as a very dangerous infection in the body. Too little attention is paid to these important, concealed infections in the jaw bones. Yoder states: "Remaining infection, no matter how small in amount, will act as a sensitizing focus."

The author found the Murray technique very useful for the removal of infected foci in the jaw bones.

Warner gave undisputable evidence that the pulps of apparently vital teeth are infected.

If we find a synchronic infection of teeth and tonsils, it is advisable to remove infected teeth first, as many cases of chronic tonsillitis clear up after extraction of infected teeth.

After complete removal of the oral foci the infection in the vein system has to be treated systematically.

In very few patients does complete removal of oral focal infection bring about a cure of the vein infections. Inflammation of the jugular vein often persists as an independent infection. In jugular phlebitis, treatment with leeches produces good results, while latent phlebitis in the deep veins of the leg can be treated successfully with pressure bandages and a great deal of ambulation.

The author's former teacher, the late Dr. H. Fischer, introduced the ambulatory treatment of deep phlebitis after he had observed that inflamed superficial veins in the neighborhood of leg ulcers healed promptly under pressure bandages. This observation gave him courage enough to treat the deep veins of the leg with pressure bandages and a great deal of ambulation.

For details pertaining to the ambulatory treatment of phlebitis the author refers to the recent article by Day. He recommends the combination (Contura plus Pressoplast) pressure bandage highly for the treatment of deep phlebitis in the legs, and he stresses that there is practically no danger of pulmonary embolism, as the combination pressure bandage imprisons the blood clots and prevents their detachment from the inner lining of the vein. In this connection it is interesting that Bauer could trace practically all pulmonary emboli to the deep veins of the calf and of the foot.

Summary

The joint cavity must be considered as a highly organized, enlarged tissue space.

The socalled synovial membrane acts as an osmotic filter between the articular blood vessels and the joint cavity.

Derangement of the exchange equilibrium between tissue spaces and the systemic circulation by venous congestion and capillary stasis, seems to be the deciding factor in the pathogenesis of arthritis.

Inflammatory stenosis in inflamed proximal veins causes venous congestion in distal joints.

Since peripheral phlebitis is in most cases caused by focogenic infections, complete removal of infected foci is important.

Recalibration of proximal inflamed veins is essential for the restoration of normal circulation in distal joints.

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200 West 54th Street

BULBOCAPNINE IN POSTENCEPHALITIC PARKINSONISM

Graphic Demonstration Of The Tremor By Means Of Electrocardiographic Tracings.

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This short presentation demonstrates 1. a graphic method of registering tremor in postencephalitic Parkinsonism and in allied conditions by the use of electrocardiography, and 2. the efficacy of bulbocapnine in controlling the two cardinal symptoms of this disease—tremor and rigidity; the prompt effect upon the tremor being graphically registered by this same method.

Tremor may affect the electrocardiographic tracing by producing muscle action current, which interferes with the one produced by the heart. While the fact that tremor produces alterations in the E.C.G. pattern is not new by any means, no method or system has been devised or formulated, to the author's knowledge, to use the E.C.G. tracing for the recording, demonstration, or study of the various types of tremors. With standardization at double sensitivity, more details on the tremor can be observed.

In Parkinsonism the marked, often powerful shaking tremor will necessarily alter the tracing. The case presented here, which refers to a young man, aged 27, is instructive for demonstrative purposes, insofar as the powerful tremor remained restricted to the right arm only, with the right leg but slightly affected, the left side of the body remaining practically intact. Consequently, tremor was expected to be demonstrable on Leads I and II, while Leads III and IV were expected to remain free. The various tracings which were made proved this assumption to be correct.

The tremor in Parkinsonism is generally considered rhythmic, with vibrations ranging between 4 and 7 per second. On our tracings the tremor had been found to be irregular both in amplitude as well as in frequency; the number of the oscillatory movements varying between 20 and 25 per second.

Chemically, bulbocapnine, an alkaloid, derived from the root of a plant known as *Corydalis Cava*, is closely related to apomorphine, which is levorotatory, as against bulbocapnine, which is dextrorota-

tory. While this drug was known and used in the middle ages, even today only fragmentary notes, sporadic case histories and incongruent or contradictory data are on record. One of the reasons for this inexplicable, if not contradictory state of affairs seems to be the fact that too much emphasis was accorded to animal experimentation. In such cases lethal or sublethal doses were often given. For this reason alone, the observations and conclusions reached cannot simply and without reservation be applied to human pathology. Another possible factor responsible for the controversial opinion and evaluation in regard to the efficacy of bulbocapnine is the therapeutic dosing as applied in human pathology. As against the regular single dose of 100 milligrams and the daily dose of 300 milligrams, according to v. Witzleben, about 1000-times smaller doses were—

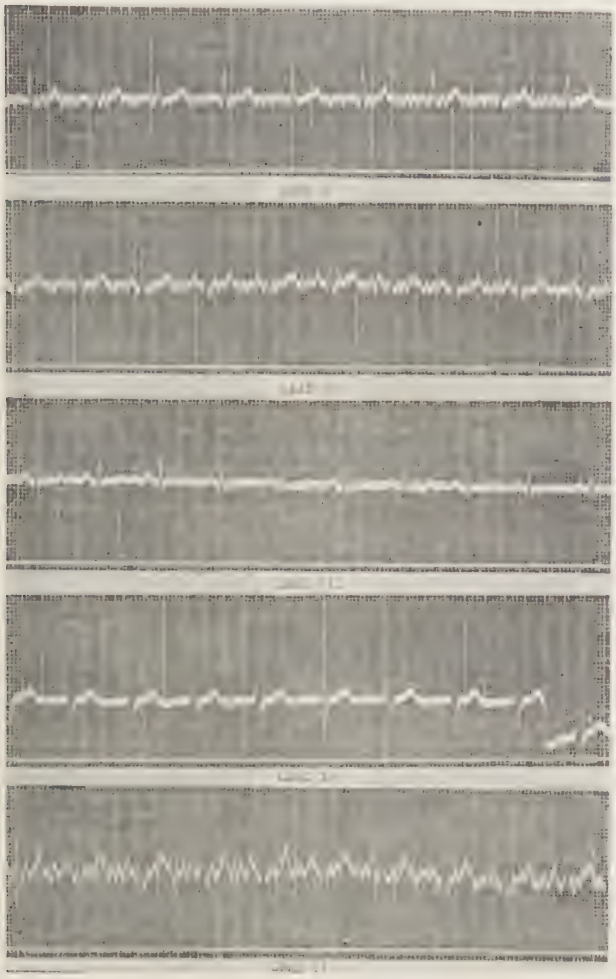

FIG. 1—Standardization at double sensitivity. Postencephalitic Parkinsonism (mostly right hand affected).

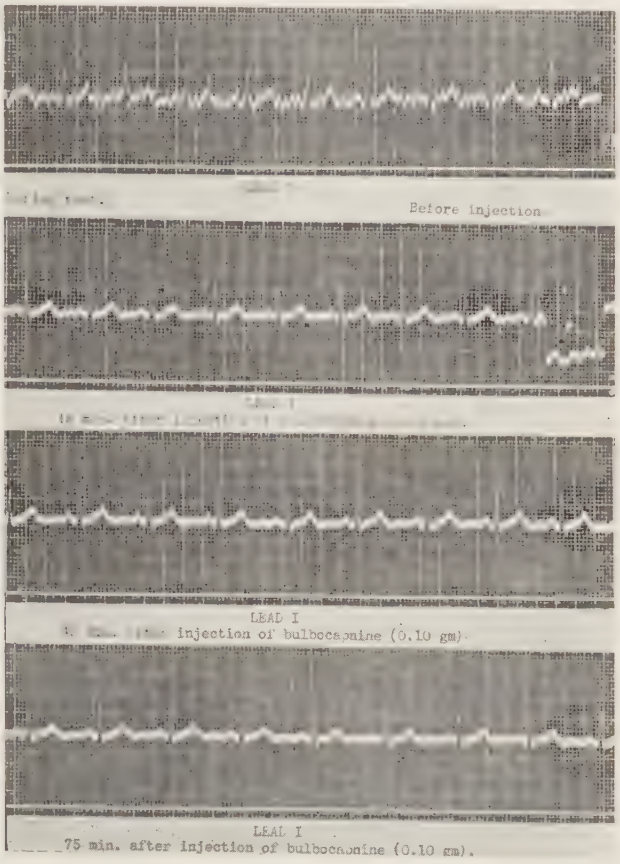

FIG. 2—Postencephalitic Parkinsonism. Hypodermic administration of Bulbocapnine Phosphate (0.10 gm.).

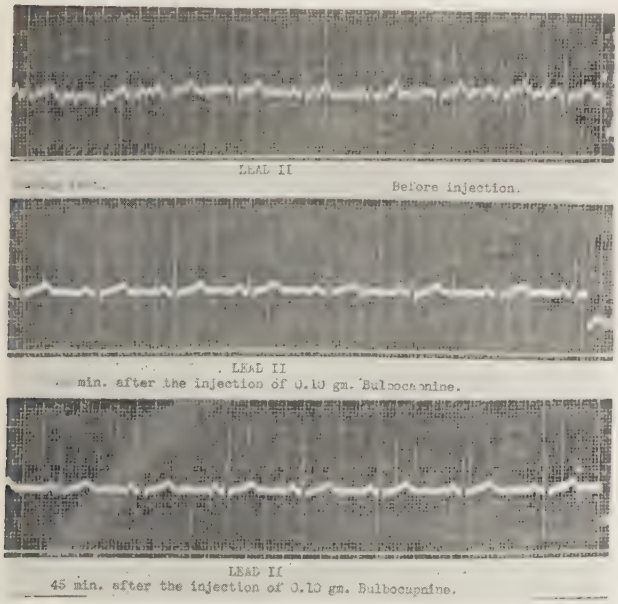

FIG. 3—Postencephalitic Parkinsonism Hypodermic administration of Bulbocapnine Phosphate (0.10 gm.).

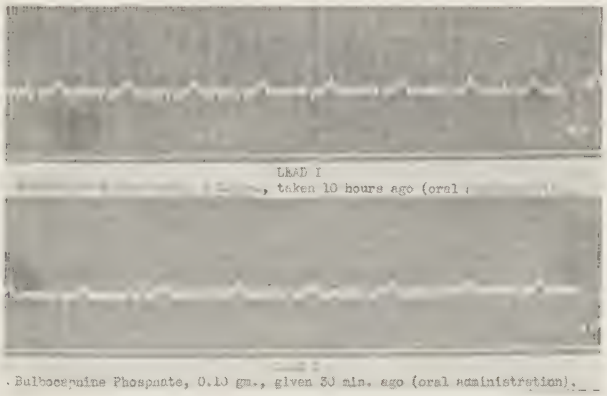

FIG. 4

inexplicably—routinely used (on average 0.10-0.20 milligram) in the past. Witzleben enumerates and classifies the cases treated by Leiner and Kaufman, Levy, Fleischhacker and by Clerici, Hill, Jenkins and Rawson. v. Witzleben, *etc.* Accordingly, it may make little difference whether the bulbocapnine effect has been classified as favorable (by the latter authors), or unsatisfactory (by the first mentioned group). (Heinz D. von Witzleben: Methods of treatment in postencephalitic Parkinsonism. Grune & Stratton, New York, 1942).

The author's own experiences concerning the effect of bulbocapnine in postencephalitic Parkinsonism, probably not quite in conformity with certain observations of some authors, are quite favorable. The effect is a very definite one. Ten or fifteen minutes after hypodermic injection and somewhat later after oral administration of the regular single dose of 100 milligrams of bulbocapnine phosphate, (*Burroughs-Wellcome & Co. Inc.*) prompt, rapid, if not dramatic effect is noted as a rule: the rigidity abruptly diminishes and the tremor greatly slows down or stops altogether. The prompt effect upon the tremor can graphically be demonstrated, as the attached electrocardiographic tracings demonstrate.

The daily dose represents about three single doses. Toxic side-effects are minimal. Neither cumulative, nor deprivation symptoms were observed, nor were they claimed to be existing, according to the literary data. After prolonged administration the efficacy of the drug seems to be somewhat lessened and the dramatic effect first observed becomes less conspicuous, probably due to habituation.

The greatest disadvantage concerning the drug-effect, at the present time, seems to be its transitory character. The prompt effect vanishes after a few hours. In fact, with continued drug administration, the length of the effectiveness may even gradually lessen. Consequently, administration of the drug becomes necessary at an increased rate. Any method or device to affect a more prolonged, protracted and stable action of the drug would be of heuristical significance.

In comparing the effect of the bulbocapnine with that of the well known and generally used drugs such as scopolamine, atropine, strammonium, belladonna, their combination, or even the Bulgarian Belladonna, *etc.*, the author should like to say, that the action of the latter drugs upon rigidity and tremor is only part of the general narcotic effect, while the effect of bulbocapnine upon the tremor and the rigidity is rather specific and the general narcotic and side-effects are negligible.

49 East 88th Street.

EPILEPSY

A Disturbance in the Nutrition of the Brain.

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West Monroe, La.

Epilepsy is frequently the manifestation of an improperly nourished brain and the symptoms presented are Nature's efforts to correct a sudden, acute scarcity of its nutrition. Perhaps one should say that the coma, the cyanosis and the convulsions are to epilepsy as syncope is to a sudden and sufficient lowering of the blood pressure. In the last instance the scarcity of blood in the brain causes one to become unconscious as there is not sufficient blood or nutrition or energy for normal consciousness to exist and Nature causes the victim to fall from an upright to a prone position, if possible, in order that gravity may be overcome and the blood, with its nutrition or energy, may be more easily returned to the brain. As the nutrition is restored by an increased blood supply, the function of the brain is restored and consciousness returns; so that rather than being a detriment, the unconsciousness and the falling are of benefit to those who have attacks of marked hypotension.

In the epileptic, the blood pressure is sufficient to deliver the nutrition to the brain yet, at intervals, the brain ceases to function; the victim becomes unconscious; the mental lamp is extinguished. Ordinarily when a lamp is extinguished one promptly and logically suspects that the source of energy, whether it be coal, oil, gas or electricity is at fault, and this thought should be applied to the mental lamp or the brain of the epileptic. Further, one knows that a lamp may be extinguished suddenly by quickly turning off the fuel supply or it may be extinguished very slowly if the supply is impaired accordingly. So it is with the brain (1) and thus one learns that (2) "many epileptics have definite psychic and sensory disturbances just before their convulsions; sometimes several days prior to them. Not only do they experience these subjective premonitions, but those who live with them detect increased irritability, augmented complaining, and the day before the attack there are sometimes discernible delusions. Some patients become profoundly hypochondriacal shortly preceding the seizure, and others even go so far as to experience hallucinations, all of which cumulative, premonitory manifestations are promptly relieved by the fit".

In order to understand how the condition was

"relieved by the fit" one may well consider the prodromal symptoms as evidence of the impairment in the fuel supply or nutrition of the brain (1) and that when it becomes sufficiently impaired or exhausted, mental function ceases; mental darkness appears and unconsciousness exists. With the appearance of unconsciousness the victim falls but without results and Nature must now do even more to restore the nutrition to the brain than was done for the victim of the low blood pressure. Therefore an oxygen deficiency, as is evidenced by the cyanosis, and convulsions occur which are followed later by a marked drowsiness or coma. After a time, consciousness slowly returns, the mental function gradually resumes its former status and, whether the epileptic manifestations are of a sudden or of a prolonged appearance, or whether *grand* or *petit mal* they "are promptly relieved by the fit". Evidently then "the fit" corrects some abnormal condition or provides an antidote thereto, as otherwise relief would not have occurred.

If one were to study the results that are produced by the convulsions, he would learn that lactic acid is made in small quantity if a normal supply of oxygen is available, but in a very large quantity if there is an oxygen deficiency. Thus it is observed that Nature apparently causes both the cyanosis or the oxygen deficiency and the convulsions to produce lactic acid in large quantity. In this connection many of us were taught that this acid was a waste product and was eliminated as such, but it does not appear reasonable that Nature would employ such dramatic and bizarre methods to produce only worthless waste. If one should study the more recent concepts of the part that this acid plays in the human economy, he would learn that it plays a most vital part in the carbohydrate metabolism. In fact carbohydrate metabolism could not occur without it and it has been repeatedly emphasized that (3) "the brain fulfills its energetic requirements largely from the combustion of carbohydrates."

To realize the importance of lactic acid, it is well to recall that Nature provided the digestive system with the ability to digest any food, including 58 percent of protein and a small percent of fat into carbohydrate or more specifically into dextrose, and to hold in reserve an ample supply which is stored up in the liver and muscles in the form of glycogen. When occasion demands, the liver changes its glycogen directly into dextrose and delivers it to the blood stream. For the muscle glycogen however, a more elaborate process is necessary to convert it into dextrose. In this instance the glycogen is oxidized into lactic acid; is placed in the blood and carried to the liver where it is changed into liver glycogen. The liver, in turn, converts this glycogen into dextrose and (4) "since the blood dextrose is convertible to muscle glycogen, the dextrose molecule is capable of a complete cycle in the animal body. It can be in turn:

Liver glycogen, Blood dextrose, Muscle glycogen, Blood lactic acid."

Expressed somewhat differently, one may say that the dextrose-lactic acid reaction is a reversible one or dextrose$\longleftrightarrow$lactic acid. In this way dextrose ($C_6H_{12}O_6$) may be split or changed into lactic acid or $2(C_3H_6O_3)$ and the lactic acid may in turn be converted into dextrose thus:

$$C_6H_{12}O_6=C_3H_6O_3+C_3H_6O_3.$$

Evidently the ultimate object back of the process of digestion and this chemical cycle or reversible reaction, is to provide the body with a normal and unfailing supply of the "fuel with which life's engine runs" whether it be dextrose or a derivative thereof. The efficiency of this process is attested by the fact that (5) "approximately four-fifths of the original quantity of glycogen is recovered at the end of the cycle involved in the carbohydrate combustion."

The detrimental part that abnormal carbohydrate metabolism plays in mental function is seen in victims of hypoglycemia or those whose dextrose supply is sufficiently reduced. As is well known, a hypoglycemic state, whether spontaneously produced as in hyperinsulinism or artificially produced as in an overdose of insulin, plays havoc with the work output of the brain even to the production of various psychoses, epileptiform convulsions and such (1). Unquestionably there are many victims of hypoglycemia who are mentally abnormal in diverse ways, including epilepsy, as it is well known that epileptiform convulsions occur when the dextrose supply becomes sufficiently reduced. At this point it is of interest to know that in the electroencephalographic changes that occur in epilepsy (6) "the abnormal rhythms are greatly increased by insulin and decreased by glucose". The fact that the abnormal rhythms which characterize epilepsy are decreased by dextrose should indicate the need of a careful study of the carbohydrate metabolism by means of dextrose tolerance tests, individual blood dextrose determinations etc. both before, during and after the episode or its equivalent. These studies may reveal a hypoglycemia or hyperinsulinism of sufficient severity to produce an increase in these abnormal rhythms and cause epilepsy. It is well known that in the artificially produced convulsions that occur in the "insulin shock" or Electric Shock treatments, the administration of dextrose promptly relieves the scarcity thereof and the brain becomes renourished and the convulsions cease. Doubtless, epileptics whose dextrose supply is below normal would likewise be benefited by an increase in their supply.

Those in whom the dextrose deficiency is spontaneously induced thru' some defect of the digestive system, an endocrine abnormality or whatnot are not so fortunate as to have a physician with intravenous dextrose available and are unable to eat or drink a concentrated carbohydrate because of the unconsciousness.

In this instance there appears to be only one way to provide dextrose and that is to make it. In order to do this the oxygen deficiency and the convulsions produce large quantities of lactic acid which is converted into dextrose thus: $C_3H_6O_3$ plus $C_3H_6O_3$ equals $C_6H_{12}O_6$ and thus Nature has repaired the dextrose-lactic acid cycle and provided the brain with its customary supply of dextrose.

All epileptics however do not have a dextrose deficiency and, as a matter of fact, (7) "Holmes studied the excised brain and showed that, even in the absence of dextrose, its oxidations continue satisfactorily, provided only that lactic acid is present (or added to the preparation). Furthermore it was found that when dextrose was supplied, the oxidations of the brain tissue progressed, provided dextrose could be converted to lactic acid, and not otherwise. Dextrose, then, is the precursor of lactic acid, which is probably the sole fuel of the living brain. By subsisting on lactic acid, the brain becomes independent of insulin, a circumstance obviously of the utmost importance to the diabetic patient".

With these thoughts in mind the importance of the production of dextrose and lactic acid in epilepsy becomes evident and one should take care to remember that whether the dextrose is sufficiently scarce to produce a lactic acid shortage; whether the acid in itself is deficient or perhaps some intermediate product as yet unrecognized, it frequently becomes necessary for Nature to provide an oxygen deficiency and convulsions to correct the condition and to provide nutrition for the brain. In short, the dextrose-lactic acid cycle can only be repaired in this way if the endocrine regulatory mechanism fails to do so — as is so often the case.

There are individuals whose dextrose-lactic acid supply is normal and yet they are the victims of epilepsy and, in this connection, one should recall that the nutrition of the brain must not only be available in the body, but must be delivered to the cortex of the brain. One will readily recall syphilitic epilepsy which results from an obliterative endarteritis of the blood vessels of the cortex; epilepsy of arteriosclerosis which results from the sclerotic changes in the cortical vessels; menengoencephalitis with its accompanying inflammation of the cortical blood vessels; neoplasms; increased intracranial pressure and in short, any condition that interferes with the delivery of the nutrition, particularly to the cortex of the brain. The various toxemias such as chronic alcoholism, the toxemias of pregnancy and the puerperium and disturbances of the adrenalin-insulin regulation of the dextrose lactic acid cycle—in short, any condition that disrupts the cycle or that prevents its delivery to and absorption by the cortex of the brain, will produce epilepsy whenever Nature is forced to take this drastic method to provide nutrition for the brain.

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PROCTOLOGIC ABSCESS

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Boston, Mass.

The diagnosis and treatment of anorectal abscess and fistula seem to have made little progress since the time of Frederick Salmon in the last century. St. Marks Hospital, London, was founded by Salmon "for the treatment of fistula and other rectal diseases." That Salmon knew more than we seem to have realized, is indicated by the terms Salmon's Law—Salmon's Line—Salmon's Rule. During the development of our work these terms have taken on a significance which was not previously apparent. English proctologists have asked where we Americans got these terms; the author is told that they are strange terms over there. No papers by Salmon are available which contain these terms and the Office of the Surgeon General of the United States says they cannot help.

Early in our experience in teaching proctology, we found that the available knowledge on the subject of abscess was meager and much of it inaccurate. Abscesses had received but little attention, from the viewpoint of improving the treatment, and only gross classification.

At our clinic* we have developed the etiology, diagnosis, classification and treatment of abscess to at least a logical degree, so that we not only understand the subject ourselves, but can make teaching, discussion and, we hope, writing understandable.

* The Dover Clinic

As the writer reads this paper again, he fears that the material may, to some, sound a bit complicated. If the tyro gets the impression that the writer has included too much, he will please note that possibly some expert will also read this paper. The tyro will read what the writer has written but the expert will be reading the writer.

Although abscess in relation to the anus and rectum is different in some respects than abscess elswhere in the body, the definition is the same. DEFINITION: *An abscess is a cavity, of new formation, containing pus.* NOTE: "of new formation." A gallbladder, a urinary bladder, the pleural cavity or the rectum, may contain pus but none of these would constitute an abscess.

In the past the etiology of proctologic abscess has, for the most part, been considered "blood borne infection." In our workshop we do not see proctologic abscesses which we think originate from blood borne infection. We discarded this "leaning post" long ago. Our ideas, with regard to the cause of abscesses in proctologic territory, have changed but little through recent years. We still think, and we think we know, that with the least of exceptions these abscesses originate in the crypts of Morgagni.

The abscess originates in the traumatized lining of the crypt. The lining is damaged by a foreign body or perhaps occasionally by other trauma and the tissues are infected. There is probably little difference between the process of the establishment of an abscess in an anal crypt and an abscess in an appendix. The protective lining, a single layer of epithelial tissue, must in some way be broken to permit infection to invade the deeper tissues.

We believe that for practical thinking we can consider that foreign bodies are the primary offenders in the process of abscess inception. The rectum is always heavily infested by infectious material. The breaking of the membrane is all that is necessary to expose the tissues to invasion.

It matters but little whether foreign bodies are involved in the starting of these abscesses; but that they originate from the anal crypts is a vital point.

At our clinic we know what the behavior of the abscess is likely to be according to the location of the crypt which is involved. We know what happens when a crypt anteriorly in the anal lining develops abscess and in what manner it will differ from behavior of a crypt infected elsewhere in the anal circumference. We know that if the infection, instead of penetrating deeply into the tissues, comes directly downward in close proximity to the skin, a perianal abscess will result. A perianal abscess is the most simple of the abscesses which are likely to occur. These perianal abscesses are the same anywhere in the circumference. It is not until the abscess becomes something other than "perianal" that the behavior changes in different areas. The perianal abscess comes from the crypt nearest to the abscess. Note Salmon's Rule: "A fistula having its external opening within one inch of the anus will have its internal opening directly on line with the external." Salmon did not know about the crypts. This rule was evolved almost one hundred years ago.

As pus increases in quantity and pressure it must go upward, downward or outward. A submucous abscess develops in much the same manner as a perianal abscess. The pus passes from its origin at the crypt, upward under the rectal membrane and the abscess enlarges in the location.

For teaching purposes at our clinic we classify the types of abscesses by the numbers one to five. These identifying numbers refer to the location of the crypt from which the abscess originated.

A "type one" abscess originates in a crypt directly anteriorly. Whether this "type one" abscess is perianal, or whether by its development it extends several inches toward the scrotum, or whether it extends upward under the membrane or outside the muscle are all qualifying items. Any abscess may or may not involve the muscle. The behavior of an abscess originating in this location is in its important development, different from those in the other four areas. It remains on the line of the raphe.

The "type two" abscess originates in a crypt located to the right or left, but close to the crypts in the anterior midline. Its behavior is different than that of a type one. The abscess does not, as in the case of type one, extend anteriorly in the socalled perineum, but extends laterally into the gluteal fat, producing an abscess which is often erroneously called a gluteal abscess. Since it sometimes heads up some inches away from the anus, it is often thought to have no relation to the anus or rectum. This abscess, unless it is perianal in type, is usually deep, and unless it is perianal it always involves the external sphincter muscle. It looks and acts differently and calls for such different treatment, that we gave it a separate classification.

A "type three" abscess, as in the case of type two, may develop either on the right or the left. It is the easiest of all the types to diagnose, the least likely to develop complications and the easiest to cure. A type three abscess is directly on Salmon's Line. (A line drawn from one tuberosity to the other, bisecting the anus.) This type three is exactly on the line.

For the convenience of the reader, may we repeat Salmon's Rule: "A fistula having its external opening one inch or less from the margin of the anus will have its internal opening directly on line with the external opening." The type of fistula referred to in this rule would, of course, be a perianal fistula. (Whether or not the muscle is involved does not affect classification.)

The "type four" abscess originates in a crypt located either in the right or left posterior quadrant of the anus. The behavior of an abscess

originating in this area is peculiar because of the structure of the tissues in this area. The abscess, if it is more than perianal, develops rather broadly in sinus formation. If it becomes extensive it is almost sure to invade the ischiorectal fossa. (Types one, two and three do not invade the fossae.) At one time, in our classification, we considered that all of the abscesses which invaded the ischiorectal fossa were type five. For this reason we formerly would say that a type four abscess which had invaded the ischiorectal fossa had "become" a type five. This type four abscess is usually broader and flatter than any of the other abscesses. When opened, the cavity seems broader and flatter than any of the others, unless, of course, it has invaded the fossa. The chief reason for having a separate classification for the abscess in this type four area, is to differentiate it from the type five. The type four does not resemble the type five excepting that it too may invade one or the other fossa, or rarely, both fossae.

The diagnosis and treatment of "type five" abscesses is work for the master. The proctologist who knows type five abscesses approaches them with confidence. If he approaches the type five and their complications with confidence, he is a proctologist of experience. The man who can diagnose, or treat, or with knowledge discuss type five abscesses and fistulae, need give no further evidence of his qualifications as a proctologist.

Let us carefully locate the origin of a type five abscess. If a perpendicular line is drawn exactly in the posterior midline of the anus, it will fall either directly on a crypt or in an area between two crypts. In an individual where this line falls directly on a crypt we may say that this crypt, which will be exactly midline and the one to each side of it, may be the origin of a type five abscess. If, however, this perpendicular line which we have drawn falls in a space between two crypts, then there may be four crypts, that is, two crypts on each side of the line, in which a type five abscess may originate. Again, we must bear in mind that if such an abscess develops directly on the margin of the anus, it will be perianal and will differ little from a perianal abscess located anywhere in the circumference of the margin. A type five abscess, however, may do many disconcerting tricks.

A type five abscess commonly travels directly backward into the anococcygeal triangle. In this case it will pass posteriorly above the subcutaneous portion of the external sphincter muscle. Located high in the anococcygeal triangle is a transverse isthmus which joins the ischiorectal fossae. This isthmus is not present in all subjects. If this isthmus *is* present then an abscess which finds its way into the triangle may follow this isthmus and enter the ischiorectal fossa on one side or the other, but rarely both. Another peculiarity in this area is a defect in the interdigitation of the levator ani muscles just posterior to the anorectal junction. Through this defect the pus of the abscess may pass upward into the retrorectal space. The above statements bring out the chief complicating developments of type five fistula. In subjects not having the isthmus and not having the defect in the interdigitation of the levators above, the abscess will probably develop entirely in the anococcygeal triangle. If permitted to continue on to the point where it erupts spontaneously, the abscess will head up in the skin of the posterior cleft just posterior to the anal margin. May I repeat? A type five abscess may become only perianal or it may involve the anococcygeal triangle, or it may invade the ischiorectal fossa, or it may invade the retrorectal space, or it may do all of these things before it erupts or is opened surgically.

In the case of a type five abscess which has become more than perianal, we should be positive whether or not the abscess has invaded the retrorectal space. This caution is also important in the case of an ischiorectal abscess. Many cases of ischiorectal abscess are combined with the retrorectal abscess. To treat an ischiorectal abscess which is complicated by a retrorectal abscess, not knowing that the retrorectal complication exists, will at best result in an internal blind fistula in the posterior midline of the anus at about the level of the anorectal line. More than one doctor who reads this article have such cases on their hands. May we include another of our rules? "The time to open an abscess is now." No poultices, no delays.

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METOPON HYDROCHLORIDE

(*Continued From Page* 400)

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Editorials

The Role of Streptococcus in Rheumatic Fever

From time to time in these editorial pages we have had cause to mention the respiratory tract as a portal of entry of the beta hemolytic streptococcus, incident to rheumatic fever. It is surprising how reticent the profession, as a whole, has been to recognize this fact. However the evidence has been accumulating for many years, often mentioned but rarely emphasized.

Diet, climate, heredity, faulty metabolism, allergy and many other possible factors have been copied from one text to another, but the arch enemy, Streptococcus, has seldom been openly accused. However, in the 1944 *Osler's Practice* edited by Henry A. Christian (15th edition) it is edifying to find the following (page 99): "The view is gaining ground that the manifestations of rheumatic fever represent a condition of hypersensitivity to various forms of streptococci of the hemolytic type, that the disease is an allergic manifestation with more serious manifestations occuring elsewhere in the body . . . This explains the failure to find bacteria in the involved tissues, while finding streptococci, as a rule, of the hemolytic variety in tonsils, sinuses, or upper respiratory tract . . . for the present, the streptococcal etiology on an allergic basis seems to have most observations in its favor." It is also stated that non-hemolytic streptococci are also often found in the respiratory tract, and seemed to have little or nothing to do with local or systemic symptoms.

Colds, sore throat, and cough are such common ailments that the practitioner seldom takes the time or trouble to culture the organisms which are surely present. Patients frequently state: "I had a strep throat",—this almost boastfully, but when asked whether a culture was taken, they look bewildered. It should not be necessary to declare that no one can make a bacteriological diagnosis without a microscope. Furthermore, we ought not to be satisfied with a report which glibly states that "mixed infection is present" or that "no tubercle bacilli were found". We must insist on knowing what *was* found. Not only that, but we should take several, possibly many cultures over a period of days or weeks. It is the persisting presence of a ruling organism which counts most, not an occasional "finding."

It is often stated that no good can come from war. That is certainly true in the abstract, but not true in the field of medicine. Some of the best students and investigators we have are always swept into the maelstrom, and if they are located "at Base" where every facility is given to "work up" the great wealth of clinical material, valuable discoveries are often made which are of great and permanent value to the science of medicine. During World War II respiratory diseases were often rampant in the various camps, and we are now getting the published results from individual and group work seen in the glowing light of considered and untroubled thinking.

In the *J. A. M. A.*, April 5, 1947, two articles on rheumatic fever are to be commended. The first by Dr. George C. Griffith of Pasadena, California, has to do chiefly with "recognition and treatment". His definition it seems to us is about perfect. "Rheumatic fever is a systemic poststreptococcic, nonsuppurative inflammatory disease with protean manifestations of varying severity and duration." He affirms that the laboratory and the clinic show hypersensitivity in lymph and blood vessels in all bodily structures. He recites three phases: 1. Invasion by the beta hemolytic streptococcus from the upper respiratory tract as seen in pharyngitis, tonsillitis, otitis media, or "sore throat". It seems to us that the lower respiratory tract might and ought to be included, since it is also subject to infection of its mucous membrane. Even if the lower tract be primarily and solely infected at the outset, coughing and spraying of bacteria into the nasopharynx will induce infection there. As a rule, however, the primary source is upper, becoming lower later as the infection spreads. 2. The latent phase, during which the infected one is "developing the rheumatic state." 3. The period of active rheumatic fever with symptoms in joints, cardiac changes, increased sedimentation rate, etc. At onset epistaxis is occasionally seen. This may be due to greater permeability of blood vessels.

Unfortunately, penicillin which is so often a valiant fighter against streptococci, is not help-

ful in treating rheumatic fever. The reason for this may be based on the type of organism as determined by the Gram stain. Dr. Griffith's summary concludes that rheumatic fever definitely follows streptococcic throat infections against which neither penicillin nor the sulfas are potent. Of the damaging complications, carditis comes first in importance, followed by pneumonitis which so often causes right-sided failure of the heart. "Every patient with a streptococcus throat infection is a potential rheumatic fever subject." Early diagnosis by determining this organism and prompt salicylate therapy are imperative.

The second article entitled "Atypical Features of Rheumatic Fever In Young Adults" was written by Dr. Maurice Sokolow of San Francisco and Dr. Albert M. Snell of Rochester, Minnesota. They summarize their experiences acquired while serving as officers in the U. S. Navy. Five clinical cases are reported, in every one of which there was some respiratory symptom or sign precedent to systemic effects. Moreover, joint involvement was not the major disability in most of these observations. In some cases articular evidence was minimal or completely absent. In others it was confined to one joint. The onset and major manifestations were limited to hands and feet occasionally, — fingers and toes chiefly. There was often a prodromal aching throughout the body, a general malaise preceding arthritis, or if acute arthritis appeared, it was of short duration with an interval between attacks. There was absence of fever in the acute stage, or atypical fever in "the observative stage". Spondylitis (Marie-Strümpell) was seen. Onset with pericarditis and pneumonitis was associated with transient arthralgia, persistent aortic diastolic murmur, and classic conduction defects and changes in the EKG T-waves.

While laboratory reports on the blood count, sedimentation rate, urine, and stool cultures are given, it is regrettable that in none of these case citations do we find anything about the organisms present in the respiratory tract. This is a common oversight and it seems to us that it ought to be brought to the attention of all clinicians, since it is paramount in determining the *kind* of enemy which is responsible for the infection.

Diagnosis of rheumatic fever may be difficult in atypical cases, but it is easy enough in the text-book type. However, to draw a comparison, time was when syphilis was diagnosed definitely only when the rash and the mucous membrane patches appeared. We were told to wait. Meanwhile the entire body had become a victim, making cure difficult or impossible. It would be well to remember that any and every respiratory infection may be induced by the organism, which when thoroughly entrenched may give rise to the constitutional signs we call rheumatic fever. We know that this is true of scarlet fever, and that diagnosis is still made chiefly from the characteristic rash, but we have taken great strides in recognizing a special form of streptococcus scarlatinae for which information the whole medical world is indebted to Doctors G. F. and G. H. Dick.

Unfortunately, we do not, as yet, have any specific destructive agent for killing the enemy "at the source". The Streptococcus still remains one of the most formidable of all our unseen bacterial enemies. Its "strains" and "families" are legion, and their actions are as yet, fairly unpredictable, but they are becoming better known, and we may yet find specific destroyers for all of them.

The Cuirass Respirator

The inflammatory lesion of acute anterior poliomyelitis affects the anterior horn cells of the spinal cord and bulb of the central nervous system with resulting paralysis of the lower motor neurones. Frequently the lesion causes paralysis of the diaphragm and intercostal muscles. Breathing is impossible and the patient requires artificial respiration with some mechanical form of apparatus. The Drinker respirator supplies this need adequately, but is large, cumbersome, expensive and frequently unavailable to an acute case of respiratory paralysis.

More recently the General Tire Company manufactured a smaller respirator which is attached to the body of the patient. During the war the Air Forces and the Medical Corps of the U. S. Army had a similar small respirator.

During a recent epidemic it was my privilege to have one made to my order from materials at hand in order to provide artificial respiration to a case before a Drinker or a smaller substitute could be made available. The Cuirass Respirator

consisted of an aluminum breast plate and a back plate which fit over the chest and back of the patient. Metal is separated from skin by a covered sponge rubber sheet two inches thick. The upper breast plate is flattened to fit snugly below the clavicles and upper sternum. This permits freedom for the neck in case a tracheotomy is necessary. The arm holes and the neck opening is closed by sponge rubber sheeting covered with silk to prevent chafing. The breast plate and the back plate are kept air-tight by turn buckles. The breast plate has windows of plexi-glass for vision and openings to take air suction and pressure tubes, as well as a gauge for determination of the degree of suction or pressure generated. A small centrifugal air pressure pump working off a small electric motor supplies ample pressure or suction. A time switch allows a cycle of ten, fifteen or twenty periods of alternating suction or pressure to correspond with the normal respiratory rate.

The Cuirass respirator has been successful in reproducing respiratory movements and maintaining vital interchange of atmospheric and alveolar oxygen in cases where paralysis of the diaphragm and the intercostal muscles interfered with normal breathing in cases of epidemic poliomyelitis.

Travel and Disease

That travel spreads disease is undoubted, and from earliest times diseases have been carried along the trade routes of the world; and the greatest trading nations, among which Britain may be numbered, have been and are the greatest sinners in this respect, if the term is applicable.

Dr. G. M. Findlay, in the *British Medical Journal*, December 25, 1946, has an interesting article on the subject. It is pointed out that the speed of travel, and the thirst for speed of modern times has added increased danger to the spread of disease. In days gone by, even fifty years ago, when the first missionaries went to Uganda, it took them three to four months to walk to Mombasa. Today a similar journey can be made by air in from three to four hours and soon the flying time will be considerably shorter. Rough country, jungles and mountains are no longer barriers, nor is disease, but that various maladies have been spread, by reason of the means at hand for rapid traveling, is obvious. "He who runs may read", as Dr. Findlay says. There is evidence that in the past few years in Africa, yellow fever, cerebrospinal fever, relapsing fever, trypanosomiasis, intestinal bilharziasis and gonorrhea have all been spread by those who have used the roads in search for work or trade.

Perhaps the most dangerous diseases borne from one country to another are those carried by infected passengers and the carriage of vectors of some diseases, notably yellow fever and malaria, and it may be said that mosquitoes can travel long distances by air. Flyborne infections present a great problem. One of the most dangerous of insect pests, the tsetse fly, will travel, it is said, by any swift moving vehicle. The prevention of air-borne diseases from being carried by airplanes is not easy to bring about, and to keep an aerodrome in a tropical country free from mosquitoes involves a great deal of labor. An aerodrome may cover several square miles, and in a district subject to tropical rains, it is difficult to keep the vicinity drained; it also means much work and a large staff of workers. It is these little pools and puddles which are the favorite breeding places of mosquitoes. Furthermore, the native villages nearby need and should institute precautionary measures. If a tithe of the money and the exercise of brains expanded in preparing for war had been used for the prevention of disease, the world might have been healthier and saner than it is now. However, it is of no use crying over spilt milk or neglected opportunities, and the situation must be faced as it is and measures taken to remove some of the most outstanding evils, including as far as is possible, the spread of disease. In order to effect this urgent object for the preservation of health and sanity, an international organization as well as the establishment of preventive measures on a world-wide scale is called for. Dr. Findlay ends his forceful article with these words, "In the age of the internal combustion engine, the spread of disease can be held in check only by a scheme which is internationally sponsored and internationally controlled".

PUBLIC HEALTH IN THE USSR

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In Czarist Russia public health was a negligible quantity; there was no obligation to care for the health of the populace. The report of the Chief Medical Inspector of the Ministry of the Interior in 1913 is significant. In that year ninety *kopeks* per capita were expended for public health, of which ninety-four percent was for therapeutic aid and only six percent for sanitary work, including the struggle against epidemics. Russia was at that time the leading European country in high mortality rates.

According to S. I. Mitskevich: "The peasant is not accustomed and does not need scientific medical attention. His diseases are 'simple' and it is sufficient for him to be treated by a *feldsher* (a medical attendant with training approximating that of a male nurse) — while the doctor is only for the master class."

Organized medical care for factory workers and others was very poor. Only seventeen percent of all factories and mills in Russia had their own hospitals. There were a great many factories which had no provisions for medical care whatsoever and resorted to private physicians only when it was absolutely necessary.

After the Great October Socialist Revolution, serious attempts to improve public health care and create a single governmental system of wide sanitary value were made. In the very midst of battle, the Revolutionary War Committee, planned a medico-sanitary system which laid the foundations of the Soviet Public Health Department.

"As a basis for its activity in the matter of public health care, the Bolshevik Party proposes, first of all, the establishment of broad measures of sanitation, whose object will be the prevention of disease." With this declaration was emphasized the need for a public health program. The new government did not limit itself to the care of the sick. Prophylaxis on a nationwide scale was instituted.

It was shortly after the revolution that several governmental departments concentrated on questions of public health. In February 1918, a medical council was created. This council unified the work of the various departments and on July 11th of that year, the decree of the first Public Health Commisariat was published. The first problem was to control typhus which had spread widely. Success was attained in arresting and controlling the typhus epidemic which at one time was so severe that Lenin said: "Either the louse will conquer Socialism, or Socialism will conquer the louse." Socialism evidently conquered the louse, which is the spreader of typhus.

During the First Five Year Plan, the Public Health Department extended prophylactic and therapeutic units of all types to cities and villages. There was a decided improvement in the quality of medical care. Clinics and dispensaries of various sorts were established in factories. These played a very important part in reducing the incidence of illness among workers as well as reducing industrial injuries.

Medical education was also reorganized. Specialists were trained in various aspects of hygiene: communal, industrial and nutritional. The quality of medical aid to maternity cases and children was vastly improved. There was a decided reduction in mortality rates throughout the nation.

Hospital facilities for the population increased five fold during the last twenty five years. About three billion *roubles* have been expended for the construction and equipment of hospitals. By 1941 a half million beds were available in city hospitals. There was an improvement in the quality of institutional help, which was distributed more evenly and became accessible to all levels of the population. In 1941 there were some 35,000 physicians in the various city hospitals and more adequate care for the sick was provided throughout the country.

During recent years the USSR built many sanatoria and health resorts, increasing the scope of public health work. In Czarist Russia health resort treatment was available only to the well-to-do. Now this type of treatment is available to the entire populace. These resorts and sanatoria have increased the number of beds to a total of half a million.

Clinics of various sorts have been widely established throughout Russia. In 1913 there were but 1,230 clinics and in 1941 there were more than 13,000. These are staffed by some 60,000 physicians. In these clinics is conducted extensive work in sanitary and public health education. As a result there has been an appreciable reduction in preventable diseases.

Industrial medicine has also taken giant strides in the USSR. Health measures have been introduced in all factories and mills. Constant supervision is maintained in all health matters, and as a result morbidity among workers in the largest enterprises of the Soviet Union has diminished.

As is known, medical aid to the peasantry in Czarist Russia was deplorable. In all of Russia there were 4,142 township medical districts and about 5,000 *feldshers* (used in districts too small or too poor for a physician) and about 49,000 hospital beds. The entire medical set-up for rural service in Russia in 1913 numbered about 6,500 physicians and 18,000 *feldshers*.

One of the first problems of the newly created Soviet Public Health Department consisted of the rapid restoration and the considerable widen-

ing of health services for the peasantry. There was a steady growth in facilities of giving health and medical services to the rural districts. By 1941 there were more than 13,500 township health districts. The beds in rural hospitals, in comparison with the pre-revolutionary period had increased three and a half times (175,000 beds) and the number of physicians four times (26,000 physicians).

At the present time, more than 70 percent of the village Soviets have a health center which is in the charge of a physician, health officer with a *feldsher* and midwife. In the Georgian and Turknebian Soviet Socialist Republics, all village Soviets have medical facilities. During the war, all village medical centers were fully manned by physicians and middle-aged personnel. As a result of this thorough medical organization in the rural districts, the population of these areas is free of such epidemics as smallpox, cholera and plague.

Care for women in matters of health was instituted shortly after the Great October Socialist Revolution. Specialized institutions were opened during the Soviet regime, and the Department of Public Health obtained sufficient sums necessary for the maintenance of mother and child care. During the past five years two hundred new maternity hospitals were opened.

The development of nurseries in the Soviet Union is phenomenal. While in 1913 there were in the whole of Russia 550 cots in children's nurseries, in 1941 there were over 800,000 permanent berths and over 4,000,000 berths in nurseries which open in villages during the summer. There are now some 17,000 pediatricians and an additional 83,000 children's beds have been set aside.

In addition to the above medical facilities, special medical services are provided during the sowing and harvesting seasons to supplement the permanently established medical centers. Field services are set up to supervise the conditions of field work. Each traveling medical brigade consists of a physician, a *feldsher*, a nurse and a nurse's assistant. They supervise the meals, quality of the drinking water and other conditions which affect the health of the workers.

Another medical innovation of great importance to rural health in the USSR is the traveling serological laboratory. Some 10,000 of these went to outlying districts in the USSR in 1940 to combat infectious disease. They accomplished a great deal in vaccinating 20 million of the populace against typhoid, 28 million against dysentery, 10 million children against diptheria and 12 million against smallpox. Vaccination against smallpox, diphtheria and dysentery are compulsory in the Soviet Union and there is much public cooperation in reducing the incidence of these diseases.

Within the past few years there has been a thorough reorganization of medical aid and health protection for the workers. Each large industrial enterprise in the USSR with two hundred and fifty or more workers has a health center on its premises at which workers and their families receive medical care. This health service functions on a twenty-four hour basis and both the day and night shifts receive adequate medical attention.

Each of these industrial centers is manned by medical men who are thoroughly enthusiastic about their work. The medical director of the Tashkent Textile Combinat in the Uzbek Republic is but one example of many. In this particular organization, matters are organized on a thoroughly efficient basis. Doctors visit the shops at frequent intervals and give brief lectures on health matters. They go to the scene of an accident together with the trade union representative and sanitary inspector and make a thorough investigation of the circumstances contributing to the accident. Through such efforts the Tashkent Textile Combinat has lowered sickness in the previous two years by about forty percent.

Medical service to the citizen is thoroughly organized in the USSR. In addition to health centers in factories, mills and farms, there is a system of district health centers, and the citizen who is not already registered for medical service through his factory, receives medical care at his local health center. When he is too ill to visit the health center he telephones for a doctor who visits him at his home. If his illness is serious enough to require hospitalization, his health chart is sent from the health center to the hospital, and when his stay is over this chart is returned to its point of origin. All such services are rendered without charge to the worker and his family.

Maternity care in the USSR is highly and efficiently organized. Prenatal care is available to all women without charge. She is entitled to thirty-five days leave of absence from work with full pay before the birth of the child and twenty-nine days of leave after that. Following this there is a provision for lighter work and no night work or overtime, beginning in the fourth month of pregnancy. Because of this there has been a vast improvement in health among women and a reduction in the maternal mortality rate.

There is a slogan in the USSR which says: "No Woman Must Give Birth to a Child at Home." In the five years following 1936, the number of maternity beds in the Soviet Union had more than doubled, increasing from 30,400 to 82,000 in cities and from 26,150 to 68,000 in rural areas.

There has also been an organized fight against abortions. Consequently there has been a rise in

the birth rate, in spite of the fact that birth control information is readily available.

The science of nutrition has received wide recognition in the USSR as a means of contributing to the public health. In 1941, a USSR vitamin committee was organized by the health and food industry commissariats to plan and direct the theory and practice of food nutrition in the USSR. The practical results of this committee has been the establishment of special diet dining rooms in many factories to correct nutritional deficiencies of various sorts. Also prophylactic diets to increase the incidence of occupational diseases have been worked out. Much information has come to light as the result of special nutritional research on the significance of vitamins in the prophlyaxis and treatment of infectious diseases. The use of vitamins in the treatment of various nervous diseases has also received a great deal of attention. Vitaminology in relation to public health is receiving a great deal of emphasis.

Another very important public health institution in the USSR is the Institute of Municipal Hygiene and Sanitation. This institute is concerned with many problems which have a close bearing on public health, such as removal of refuse, ventilation of dwellings, the odors and tastes of drinking water, suitability of clothing to climate, the health aspects of city planning, atmospheric pollution, *etc.* Data gathered by this institute becomes the basis of public health regulations, such as dust, gases and smoke precautions to be taken by factories.

Because of the very efficient work of the public health agencies in the USSR, the leading killers — cholera, typhus and smallpox have been practically eliminated. Even as far back as 1936, only 200 cases of small pox were registered in the Soviet Union in the first six months of the year as compared to 2,827 cases in the United States. The 6 cases of diptheria per 1000 population was much lower than 20 per 1000 in the United States. By 1936, typhus had been reduced to a tenth of the figure of three years previously. In all other infectious and contagious diseases there have been notable reductions as the years go by. There has also been a notable decrease in occupational injuries.

At the head of the public health commission in the USSR is G. A. Miterev, who is a member of the highest administrative body of the Soviet Union, the Council of People's Commissars. He is assisted by two groups of experts: a Collegium, of which he is chairman, and which meets once a week to consider practical administrative matters and which drafts orders and instructions which will be binding on all health institutions and workers; a Scientific Medical Council, consisting of over a hundred of the nation's leading physicians and surgeons, serving under Dr. Miterev and which meets with him at stated intervals to consider medical problems. Under these men the public health of millions of people throughout the vast Soviet Union has improved considerably in the past few years.

During the Second World War, the Soviet Public Health Department found its labors greatly increased. Dr. G. A. Miterev, its head, in an article "Public Health In The USSR", published in the August 1945 issue of the *American Review of Soviet Medicine*, summarizes the accomplishments of his department as follows:

1. The Soviet Public Health Department studied epidemics and their causes arising in the course of the war. The first problem was the adoption of anti-epidemic and sanitary measures in the regions that were liberated from Nazi occupation.

2. Work continued on the following: 1. pathogenesis and treatment of war trauma, shock and reconstructive surgery; 2. the struggle against infections, particularly among children; 3. nutrition and utilization of new nutritive resources for children in particular; 4. the development of the theory and practice of anti-chemical defense and resources; 5. work on tuberculosis, cancer and arteriosclerosis.

3. New surgical methods were developed for the primary and secondary treatment of wounds. The Soviet Public Health Department adopted all advances in modern synthetic chemistry which enabled large scale production of bactericidal and bacteriostatic compounds. The intensive study during the war of the microbic flora of wounds aided in the development of powerful specific biologicals for tetanus and other infections. Biologic and chemical preparations which stimulate rapid wound healing have been studied. The cytotoxic serum developed by Bogomolets is used in delayed union of bony fractures and chronic ulcerating wounds.

4. Intensive research is continuing for new treatment of traumatic hemorrhage and shock. Blood transfusion was found to be one of the more effective methods of treatment in acute hemorrhage and shock, and stimulation of wound healing in sepsis. During the war many preparations were tried to stop hemorrhage. Thrombin prepared by V. A. Kudryashev proved most effective.

5. The celebrated all-peoples movement *geokchaiskoye*, to bring sanitation to the cities and towns, to public places and homes, alerted thousands of workers, housewives and intelligensia. The Soviet citizenry, masses of *acrives*, gave the public health organizations invaluable assistance. For the past twenty-five years medical workers and public health organizations tackled and solved difficult problems.

183 Avenue O.

MEDICAL ESSAY

Mind Your Own Business

B. LIBER
New York, N. Y.

Before entering the study of medicine, this author, a mere youth under twenty, and still in the age of innocence regarding life as a whole, thought that healing was an easy job. All one had to do was to learn the names of all the illnesses and to memorize the corresponding remedies. Had he not learned to memorize so many poems? However, as soon as he began to dissect a portion of a cadaver—at which occasion, by the way, he fainted—he realized that the business of curing was not as simple as all that.

From that time until now, more than fifty years have passed and although he still knows little, he has picked up a good deal. At the height—or the end—of one's professional work, one looks at the huge task with deep humility. Not only do we know how difficult it is and how comparatively helpless we are, but we want to go back to the beginnings of each trouble and, not satisfied with that, we must think in terms of prevention, that is try to discover the cause of the causes. This leads us to the surroundings in which the ill person spends his life.

We are sorely aware that we, as individual physicians, cannot cope with heredity, enviroment and the immediate and distant circumstances in which our patients live. However, being practical and modest philosophers, we are content with what we can do. We soon find out that in many cases we must put the sufferer in a situation where his business is affected or even ruined, if his health and life are to be saved. We interfere with people's marriage, calling, education and we must even be good salesmen to convince them that we mean their welfare. At the same time we must employ some judgment not to scare them too much lest their fighting morale be destroyed. We scheme for their own good.

Of course, they can tell us to "mind our own business", but that is precisely what we do when we mind theirs.

One often must be extremely eloquent to persuade a worker, supporter of a family, to leave his occupation because of pulmonary tuberculosis or bleeding stomach ulcer or a cardiac condition. Much more diplomacy is necessary when one deals with the middle class. They have something tangible to lose—not mere life. Money or profit is to them more valuable than health.

An owner of four stores happened to be one of those persons who made himself indispensable everywhere. Although he had a good many clerks, his customers wanted to see the boss himself and he managed to be almost everywhere at the same time. He had a bookkeeper and his offices were visited regularly by an accountant, but he spent many evening hours with his nose in his ledgers. He never read—not even the newspapers. Music, shows, movies were not for him. From early morning to midnight he was busy. Naturally, he made money, but his real business, his health, was utterly neglected. Then came the coronary attack. When all the examinations were done, he not only had to leave his stores for two years, but, following his doctor's insistence, the wife had to sell three of them, so that, when the patient—whose sins were "forgotten and forgiven"—finally returned, he possessed only one.

Sometimes our advice fails to bring the expected happy ending. The parents of one youngster were watching him so thoroughly that he had no occasion to be mischievous, to make a mistake or to develop his inborn foresight or any original thought. The family physician told them something about the need of more freedom and tolerance in upbringing. Once, when the winter was rich with deep, fluffy snow and everywhere thousands of children were playing boisterously with their sleighs, our little hero too wanted to taste the pleasure. However, just because he had had a sore throat six months before, the mother came to the doctor to ask him whether it was all right to give in to the child's request. No one could refuse such entreaties. However, the boy, unused to dangers and to situations where quick judgment was necessary, ran into a tree and badly fractured his tibia. Would this doctor, in the future, have denied a similar request for such a child? Of course, not.

A family wanted their daughter to have a commercial education, while she was inclined to draw and paint. When she showed distinct signs of mental maladjustment the doctor was consulted and his advice was to let her go to art school. She improved, nay, she regenerated. Two years later she brought him a large landscape as a gift. However, noticing his half-concealed disappointment on his face, she asked him why he had fought so much for her. "I would do it again", he replied. As a matter of fact, notwithstanding the doctor's dislike of her work, the young artist achieved great success.

In the same way a physician had to face an angry aunt who was supporting an orphan child, when the latter wanted to take singing lessons, while his foster-parents had decreed that clerkship in their wholesale warehouse was good enough for him. They compromised on letting him cultivate his baritone voice under the supervision of a teacher, but only in the evening hours. Later, he had more training in a school and after an audition gained at last the privilege of a minor role in an opera. The doctor was full of joy and bought tickets for himself and his wife to hear his protégé in his brief début appearance. Incidentally, the physician almost lost the opportunity. His wife was waiting in front of the opera building and was angry: "Quick, you're late again! They've started the performance already. You're as bad as your patients. Can't you enjoy something completely? And why do you bring your bag? Couldn't you have left it at home?"—"No,

dear, no time to go home—and immediately after this I must hurry to an old man who needs catheterization. I'll have a male nurse there and I'll show him how to do it".—"Well, I'll say that is a fine combination: catheter and opera! You could have put your catheter into your pocket."—"But you never can tell what you may need and besides, I may want to go up to see the scarlet fever baby. It's in the same block."

A circus man suffered overnight from a Bell's palsy and his doctor tried to console him by saying that this facial illness might disappear rapidly and, if not, it would not interfere with his acrobatic work. However, the patient was badly upset: "I am through. I must look for some other job, and I know nothing else. True, my stunts are done with the entire body. However, my art demands a bow and a smile after each act and I must face the audience squarely. My employers want me to do that. I've got to have—what do you call it?—a personality face." In other words, his face too was "his fortune". In his despair he resigned and was actually looking for another occupation, when the doctor wrote to the employing company and, expressing his hope of a cure, had him reinstated. The face was never really normal, but his employers became accustomed to it and kept him on the job.

A girl was suffering from heart trouble and always obeyed her doctor. When he learned that she was in love with a man of her age, his first idea was to advise her not to get married or to postpone marriage indefinitely. However, she told him about the "mad house" she was living in; she was the black sheep—mistreated by everybody. The endless quarrels among her parents and among her sisters and brothers wounded her delicate nature. She had been working in offices almost since her childhood and, although tired at the end of the day, her home was not conducive to rest. On the contrary, it added excitement and bitterness and made life more unbearable. The doctor felt like the French poet who described how he had caught a bird and, moved by the feeling that he could do what he wanted with it, left it go, exclaiming: *"Je viens d'être la mort"!* But the doctor said to himself that he would rather be life to her and allowed the marriage, giving instructions as to precautions.

In another case a boy was exceedingly interested in a girl of a different faith and she in him. The parents on both sides, however, savagely opposed to their marriage, asked the family physician to act as judge, a role which he hated profoundly. He listened to all the arguments. The children had only one thing to say—they loved each other, but they would submit to the doctor who had taken care of them since babyhood. Could a physician resist such a plea?

65 West 95th Street

News Items

World Health Organization Constitution.—Twelve nations have ratified the World Health Organization Constitution, according to a report from WHO Interim Commission. In 1947 the following nations thus far have ratified: Liberia, Ethiopia, Switzerland, Transjordan, Italy, and the Netherlands. Previously China, United Kingdom, Canada, Iran, New Zealand, and Syria had become parties to the Constitution. A total of 26 ratifications by members of the United Nations are required for the WHO to become a specialized agency of UN.

National Gastroenterological Association.—The National Gastroenterological Association has announced that the first prize in its 1947 Prize Award Contest for the best unpublished contribution on gastroenterology or an allied subject has been awarded to Dr. Frederic Duran-Jorda of Manchester, England.

Dr. Duran-Jorda's paper on "Histo-Pathology of the Semi-Squamous Epithelial Layer as Found in the Colon" was selected by the Judges from amongst twelve entries received from all parts of the world. The check for $100.00 representing the first prize and a Certificate of Merit was awarded at the Annual Banquet held at the Hotel Chelsea in Atlantic City, N. J., on Thursday evening, June 5, 1947.

Certificates of merit were also awarded to Drs. William Nimeh, Mexico City, D. F.; August Schrumpf and Trygve Kahrs, Porsgrunn, Norway; W. Paolino and G. Boccuzzi, Turin, Italy.

American Bureau for Medical Aid to China.—Forty-five of the hundred and twenty-five Chinese doctors, dentists, public health experts and nurses to whom fellowship awards will be made annually, are presently in this country engaged in advanced studies at leading American universities in fourteen states, it was announced recently at United Service to China headquarters, New York, N. Y. Seven additional fellows are now enroute to the United States.

The fellowship awards were bestowed by the American Bureau for Medical Aid to China, a cooperating agency of United Service to China, as part of a three-year program under which six national medical colleges in various parts of China will receive aid designed to elevate their standard of medical education to that of the best institutions in the United States, the announcement stated.

The recipients of the awards are given an opportunity to learn recently developed methods and techniques from which they were cut off during the war. On their return to China after a year's study they will join the faculties of the six national medical colleges which were selected to receive this assistance.

Schering Research Grant.—Drs. Harold L. Temple and Sydney Weintraub, of the Department of Radiology of Cornell University School of Medicine, New York, have been granted a research fund to support further studies in the field of radio-opaque media. The grant has been established by Schering Corporation, of Bloomfield and Union, New Jersey, manufacturers of x ray diagnostic agents for urography and cholecystography, as well as essential endocrine and chemotherapeutic products.

The Hebrew Medical Journal.—The attention of the medical profession is directed to the appearance of the Spring issue of *Harofe Haivri* (*The Hebrew Medical Journal*), a semi-annual bilingual publication edited by Dr. Moses Einhorn. This issue, Volume 1, 1947, inaugurates the 20th anniversary year, and in his editorial Dr. Einhorn discusses in detail the aims and growth of the Journal through the years.

The original articles are summarized in English to make them available to those who are unable to read Hebrew. For further information, communicate with the editorial office of *The Hebrew Medical Journal*, 983 Park Avenue, New York 28, N. Y.

International Union Against Venereal Diseases.—In accordance with plans made by the International Union against the Venereal Diseases to advance its work through offices in various parts of the world, a Regional Office for the Americas has been established in New York to serve the Western Hemisphere, and to act as liaison with the United Nations.

Dr. William F. Snow, Union president, recently announced the new office on behalf of the Secretary-General Dr. André J. Cavaillon of Paris. Facilities and staff for the Regional Office are being provided through cooperation of ASHA's Committee on International Relations and Activities, at 1790 Broadway, New York, with Miss Jean B. Pinney as Regional Office Director.

Genealogy of Sex Hormones.—In honor of the 100th Anniversary of the American Medical Association, the Schering Corporation has issued a study of the historical development of the male, female and corpus luteum hormones entitled *Genealogy of Sex Hormones*. This commemorative keepsake contains a colorful family tree describing the struggle for knowledge of the hormones over twenty-three centuries of medical history. The painting, by the American artist Antonio Petrucelli, depicts scenes ranging from the studies of Aristotle in the 4th Century B. C. to the modern development of pure crystalline hormones.

Copies of this study may be had on request to the Professional Service Division, Schering Corporation, Bloomfield, New Jersey.

Tuberculosis Experts Committee.—The Expert Committee on Tuberculosis of the World Health Organization will have its first meeting on July 30th in Paris. Dr. Johannes Holm of the State Serum Institute, of Copenhagen; Dr. P. M. D'Arcy Hart of the Medical Research Council, London; and Dr. Herman Hilleboe, assistant surgeon general, U. S. Public Health Service Tuberculosis Control Division, of Washington, D. C. are among the members already named to this Committee.

Specialist Training in Allergy.—The University of Illinois has announced that specialist training in allergy, inaugurated at the University as a one-year post-graduate course in January, 1946, will be offered to ten more physicians during the next calendar year.

The twelve month course will be conducted by the University's allergy unit, a joint organization of the colleges of medicine and pharmacy at the Chicago professional colleges. The course will open on October 1, 1947, and continue through September 30, 1948.

Nineteen basic science subjects are listed in the curriculum. Three new subjects have been added; these include mycology by Dr. Clifford Kalb, histo-pathology by Dr. Isadore Pilot, and statistics by Dr. Elmer Becker.

Ten doctors who have completed a year's internship and who graduated in the upper half of their class in medical school will be eligible for registration. The course will be conducted under the direction of Drs. William Welker, B. Z. Rappaport, and Adolph Rostenberg, Jr.

Aviation Medicine Course Announced.—The recall of twenty Medical Corps Reserve Officers annually for a period of ninety days, for the purpose of attending a course of instruction and training in Aviation Medicine was reeently announced by the War Department.

The course of instruction which is being presented under the technical supervision of The Air Surgeon at the AAF School of Aviation Medicine, Randolph Field, Texas, covers a study of the fundamentals of Aviation Medicine with a special emphasis placed on the principles and practice of Medicine as applies to Aviation and the efficient performance of the "64" Physical Examination for Flying. Each graduate will receive a certificate designating him an Aviation Medical Examiner.

The first class will begin October 6 and extend through December 12, 1947. Government quarters will be available at Randolph Field for students enrolled in the course. Facilities will not permit quarters for dependents.

Applications for this training should be made by letter, accompanied by a copy of the WD AGO 64, "Physical Examination for Flying," to the Office of The Surgeon General, Attention: Military Personnel Division, by not later than August 15, 1947.

International Spanish Speaking Association of Physicians.—The Board of Directors of the International Spanish Speaking Association of Physicians held a meeting on May 8, 1947, at which time it was unanimously decided that it is now the appropriate time for the planned Latin American Congress.

They therefore request that those who are interested be kind enough to answer the following questions:

1. Which Latin American Country do you prefer for the International Congress?
2. Which month of the year do you prefer for the Congress?
3. How much do you prefer to spend for round trip of the Congress?
4. On what subject do you prefer to read a paper at Congress?
5. Do you wish to take with you a member of your family?

Answers should be addressed to: J. M. Gershberg, M. D., 125 Riverside Drive, New York, N. Y.

Fellowship Survey for World Health Organization.—Dr. Joseph Vesely, assistant chief of field services for the World Health Organization, Interim Commission, has recently left the United States following a coast to coast survey of medical schools and universities in behalf of the WHO fellowship programme, according to an announcement made by the Interim Commission.

Dr. Vesely visited twenty-six institutions in a thirty day tour. Following his survey, he reported to the WHO headquarters in New York that despite tremendous pressure of facilities and teaching personnel, the institutions accorded him a cordial reception and for the most part offered to cooperate in the fellowship programme.

Under the WHO plans, more than two hundred fellowships and lectureships will be awarded to medical and public health personnel from nations formerly receiving UNRRA medical aid. These are, for the most part, countries of mid-Europe, Southern Europe, the Near and Far East.

Eastern schools visited include Johns Hopkins, Harvard, Yale, Rochester, Columbia, Cornell, and New York Universities. In the Middle West Dr. Vesely visited Michigan, Chicago, Northwestern, Illinois, Cincinnati, and Western Reserve Universities.

In the South he conferred with officials at Emory and Vanderbilt Universities and in the Far West with California, Leland Stanford, Southern California Universities, and with the California Institute of Technology.

Other institutions and organizations visited were the Medical Evangelist College, Loma Linda, the U. S. Public Health Service Communicable Disease Center, Atlanta, Ga., Memorial Hospital, New York (cancer research facilities), the Hauskell Laboratory at Wilmington, Del., and the University of Toronto, Canada.

Personal. — Dr. William R. Bond has been appointed Medical Director of Van Pelt and Brown, Inc., Pharmaceutical Chemists, Richmond, Va.

Richard Logsdon, formerly chief librarian of the U. S. Office of Education, has been appointed assistant director of the Veterans Administration library service, F. R. Kerr, assistant administrator for VA's Special Services announced. Mr. Logsdon will assist F. R. St. John, director of the VA library service, in the operation of the 119 medical and 119 general (or patients') libraries in VA hospitals and homes, and the general reference library in VA's Central Office in Washington, D. C.

Dr. Leo Eloesser, for two years, 1945-1947, general surgeon at the Central Hospital, Nanking, China, on the medical staff of the United Nations Relief and Rehabilitation Administration, is returning to China on behalf of the World Health Organization Interim Commission.

Dr. Bernardo Alberto Houssay, of Buenos Aires, Argentina, was awarded the first annual Research Award of the American Pharmaceutical Manufacturers' Association "in recognition and appreciation of his illustrious contribution to medical science."

Dr. Oswald Theodore Avery, emeritus member of the Rockefeller Institute for Medical Research, received the honorary degree of Doctor of Science at New York University's 115th Commencement Exercises.

Dr. George L. Wolcott has been named Director of the Professional Department of Bristol-Myers Company, New York, according to a recent announcement by that Company.

Major General Raymond W. Bliss is the new Surgeon General of the Army, succeeding Major General Norman T. Kirk. His four year term began June 1st. Brig. General George E. Armstrong assumes the duties of Deputy Surgeon General.

Lieutenant Colonel Stephen C. Sitter, M. C., has been appointed Assistant Chief of the Neuropsychiatry Consultants Division, according to a recent announcement by Major General Raymond W. Bliss, The Surgeon General. Colonel John M. Caldwell is Chief of the division.

Dr. Cameron St. Clair Guild, executive secretary of the American Trudeau Society and director of special programs for the National Tuberculosis Association, has been appointed as assistant chief of the tuberculosis section of Veterans Administration Branch Office No. 12 at San Francisco, Calif. Dr. Guild will take over his new duties May 1.

Dr. B. Liber, New York, N. Y., has been reappointed as American correspondent to *Presse Medicale*, the foremost French medical journal. This journal had been suspended during the war years.

Dr. Maurice L. Tainter, vice-president of Sterling Drug Inc., and director of the Sterling-Winthrop Research Institute, has been elected an honorary member of the Society of Pharmacology and Therapeutics of the Argentine Medical Association of Buenos Aires, according to a recent announcement.

LETTER FROM BRITAIN

(From Our Own Correspondent)

Matters in Britain are, generally speaking, in a very unsettled state and the experience of all professions and trades is chastening. Medicine or its practise is on the verge of great changes and no one can say whither it is going. It is certain, or at least it seems, that it will no longer have the freedom it has enjoyed in the past but will be hedged in by various limitations and restrictions. It may be that inhabitants of this country are complacent. In any event we must wait to see what will happen and hope for the best. The health of the community at large is the most important issue, to which, no doubt, all members of the medical profession will agree and play their part in securing and maintaining. At any rate, the experience is one which gives rise to anxiety and speculation.

British Representatives at Centenary Celebrations of American Medical Association

Dr. Guy Dain, Chairman of the Council of British Medical Association, Dr. Charles Hill, Secretary, Dr. Hugh Clegg, Editor of *British Medical Journal* and Dr. J. A. Priaham, Chairman of the International Relations Committee, represented the British Medical Association at the celebrations of the Centenary of the American Medical Association held at Atlantic City in June of this year.

Research on Streptomycin

Clinical trials with streptomycin are being carried out by the British Medical Research Council on a limited number of patients, the Council having been given permission to import sufficient quantities of the drug from America for the purpose. Until the results of these tests are more certain, that is from all standpoints, scientists in Britain engaged in the research are emphatically against any indiscriminate use of the drug.

Cancer Research

The British Empire Cancer Campaign has awarded the Garton Medal Prize of £500 ($2,500) to Prof. A. L. Kennaway in recognition of his outstanding contributions to cancer research. Professor and Mrs. Kennaway in their examination of the Registrar General's reports on the deaths in Britain have found that cancer of the scrotum is about twenty times less frequent in men of the highest social class than it is in the general population. Thus it seems that if cleanliness was employed with other hygienic habits and was spread over society in general, one form of cancer at any rate would be greatly diminished. John Westley's dictum that cleanliness is next to godliness also should be applied to matters of health in general. Dr. W. G. Gye, F. R. S. Director of the Imperial Cancer Research Fund and Dr. James Craigie F. R. S. at a meeting of the Council of the Royal College of Surgeons held on April 10 last, have been appointed Imperial Cancer Research Fund lecturers for 1947.

Evidence of Venereal Disease Among British Troops

Dr. F. J. Bellenger stated recently in the British House of Commons that the number of cases of venereal disease reported and healed among British troops in Britain itself during 1946 was 3.3 percent.

Annual Malaria Control Courses

The annual malaria control courses for planters, nurses and others was resumed at the London School of Hygiene and Tropical Medicine. This year the course was held at the school during June 23-27. The course is free.

Holweck Prize

The Holweck Prize for 1947 of the Physical Society and the Medaille Holweck of the Societé Francaise de Physique has been awarded to Professor G. N. da C. Andrade, Professor of Physics in the University of London in recognition of his experiments and investigations on the solid and liquid states.

Paris Academie des Sciences

Professor F. J. M. Stratton, Professor of Astrophysics in the University of Cambridge and Professor A. Dainvillier of the Ecole Superiereure d'Electricité have been elected correspondents for the section of Astronomy; Professor P. M. S. Blackett Langworthy, Professor of Physics in the University of Manchester and Professor Emile Heriot, Professor of Physics in the University of Brussels have been elected correspondent for the section of General Physics of the Paris Academie des Sciences.

Part-time Nurses

A nation-wide campaign is being launched to enlist part-time nurses. Gloucester County Council were the first to enlist the services of workers in this field and with success. The British Ministry of Health organized a similar scheme throughout greater London and have been successful too, more than two thousand workers haveing volunteered since February last. It seems that a national campaign is the logical outcome. Nurses are needed. Service of any description is scarce and it goes without saying that nurses are a necessity in these times more than ever and a supply of part-time nurses will aid in relieving the shortage.

Student Chemists

At the Annual Conference of the British Pharmaceutical Students Association held in London during the first week in April, Mr. C. W. Maplethorpe, chairman of the Education Committee of the Pharmaceutical Society of Britain, said that recommendations had been made for a three year post-matriculation college course to train candidates for the Statutory qualification of pharmaceutical chemist. This will be extended to a four year course in 1952, thus raising the standard of the minimum qualification to that of the new B Pharmaceutical Honors degree of London University. The recommendation awaits the approval of the Privy Council.

Book Reviews

Roentgenology

Principles in Roentgen Study of the Chest. By WILLIAM SNOW, M. D., director of radiology, Bronx Hospital, roentgenologist in charge, Harlem Hospital, N. Y. Illustrated. Springfield, Ill.: Charles C. Thomas, 1946. Pp. ix + 414. Price $10.00.

Roentgen interpretation in clinical medicine attains its fullest advantage when there is correlation of the history, physical signs, knowledge of the physiology and pathology, and of the changing pattern in the progressive course of the disease and during its retrogression and healing. With this in mind, this book has been compiled from Dr. Snow's long time experience and from the assemblage of a vast material. It presents and illustrates in a clear, interesting, definite, and informative manner the principles involved with each subject. Snow also outlines some basic principles in the diagnostic rationalization of the nature of the roentgen shadows in the bronchial tree, which hitherto were identified unsatisfactorily. Over five-hundred illustrations make this volume more complete and richly illustrate the subject. A very satisfactory bibliography of the more important published contributions is included.

The book is excellent and should find a distinct place on everyone's shelf.

Tropical Diseases

Manson's Tropical Diseases. A Manual of the Diseases of Warm Climates. Edited by PHILIP H. MANSON-BAHR, senior physician to the Hospital for Tropical Diseases, London, the Albert Dock Hospital and the Tilbury Hospital. Twelfth edition. With 17 color plates, 9 half tone plates, 406 figures in the text, 6 maps and 28 charts. Baltimore: The Williams & Wilkins Co., 1945. Pp. 1068.

This classical contribution to the diseases of warm climates is a great tribute to its scholarly editor. Its preparation was impelled by the growing importance of tropical diseases after the war. The present volume is a far cry from the handy first edition which was issued for the exigencies of travel and of tropical life. The manual has grown to large proportions, embracing all aspects of the subject in great detail. Many chapters have been rewritten and special attention has been given to malaria, yellow fever and nutritional diseases. A new chapter has been added on the technique of injections in the tropics. The book begins with an evaluation of life in the tropics, acclimatization and all the effects of hot climates on the organisms, suitable nutritional hygiene and clothing and endemic diseases.

The section on fevers includes protozoan, spirochetal, bartonella, rickettsial, bacterial and virus. Laboratory methods are stressed for early diagnosis. Chemo- and antibiotic therapy are evaluated for each disease. An unusual feature is the author's consideration of geographical pathology. It unravels the question of how disease in the tropics is modified by hot weather. The chapter on fevers due to atmospheric causes, gives fine points in the clinical differentiation from other fevers. The section on deficiency diseases is limited to beriberi, pellagra and tropical scurvy. The section on abdominal diseases is limited to cholera, dysentery, tropical sprue and infantile cirrhosis of the liver. The section on infective granulomatous diseases stresses prophylactic measures for leprosy, yaws and blastomycosis. The section on the central nervous system is limited to neurasthenia, encephalitis and latah. Tropical venereal diseases includes bubo and ulcerating granuloma. Animal parasites abound in the tropics, and the diseases associated with them are stressed from the laboratory standpoint. There is a remarkable section on medical protozoology, with beautiful illustrations of the offending organisms with their habitat, life history and characteristics.

The design of this unique book is neither encyclopedic, bibliographic or synoptic; rather the plan presents a succinct, narrative account of all the aspects of tropical diseases including clinical, laboratory and scientific information ready to be put to use in daily practice. It differs from the traditional textbook in its extensive use of photographic tables and graphic representations that facilitate the study of each disease. Disorders peculiar to warm climates have extended to all parts of the world, for geographic barriers are being swept away by the intermingling of populations. Diagnosis is simplified by an etiological arrangement, of closely grouped allied organisms, so that their morphological and pathological activities may be readily compared and by following a uniform order of presentation, their comparable clinical facts may be found in the same sections. The book is a veritable mine of authentic information based on the wealth of experience of its eminent author.

Asthma

The Treatment of Bronchial Asthma. By VINCENT J. DERBES, M. D., instructor in medicine and in preventive medicine, Tulane University of the Louisiana School of Medicine; and H. T. ENGELHART, M. D., instructor in clinical medicine, Baylor University College of Medicine, Houston, Texas. With chapters by a panel of contributors. With sixty-one illustrations. Philadelphia, London, and Montreal: J. B. Lippincott Co., 1946. Pp. xv + 466. Price $8.00.

The authors have had the good fortune to enlist seventeen collaborators in writing this work, every one of whom is an "authority" in some field of medicine. But not all are physicians. For example, Dr. Louis I Dublin (Ph.D.), Mr. Herbert H. Marks of the Metropolitan Life Company, a statistitian, and Ernest C. Faust, (Ph.D.) professor of parasitology in Tulane University,—these are well-known laborers in fields adjacent to medicine and have much to contribute.

Dr. John H. Musser, formerly of Philadelphia, but at this time professor of Medicine in Tulane, writes the Foreward. He truly says that bronchial asthma is one of the most discouraging and disheartening diseases, both to physician and patient. The "causes" of asthma are like the sands of the sea, innumerable, and even when we speak of known

causes such as "cardiac asthma", we can do little to relieve and can offer no "cure". Asthma due to associated sinusitis or allergies offers more hope of relief, but many patients with alleged sinusitis are not of the infected type, in fact are not sinusitis at all in a strict sense, but show symptoms of an outraged mucous membrane due to pollens, dust or other irritants. If we can do away with such known causative agents, or "desensitize" the patient we have accomplished much toward relief. However, there is a much larger class of sufferers in whom the causes are obscure, faulty metabolism, perhaps, and the like. Here the physician's skill and knowledge are tried to the utmost, so much so that many confreres "will not take a case of asthma" if there is some other way, such as having the patient change climate or even "try Christian Science!" As to the latter "remedy", it may benefit the neurotics, and there is no denying that some persons have a psychogenic basis for their asthma.

This treatise is thoroughly scientific, and goes into such matters as the bearing of plant and animal life in its various phases upon the psychosomatic considerations of a given patient.

Diabetes

A Primer for Diabetic Patients. An Outline of Treatment for Diabetes with Diet, Insulin and Protamine-Zinc Insulin. By RUSSELL M. WILDER, M. D., professor and chief of the department of medicine, Mayo Foundation, University of Minnesota; senior consultant in the division of medicine, Mayo Clinic. Eighth edition, reset. Illustrated. Philadelphia and London: W. B. Saunders Co., 1946. Pp. x + 192. Price $1.75.

We are told in the jacket blurb that "This book will help your doctor to help you." This is, indeed, a desideratum, for feeding a diabetic requires sound knowledge of the chemistry, caloric values, and reactions of foods upon the metabolism of the body in this serious disease.

The preface states that no radical changes have been made in the method of treatment of diabetes since the 7th edition was published, but that there have been changes or alterations in procedure. How to keep the diabetic, child or adult, in his normal daily groove with the greatest degree of vigor in mind and body, and to keep resistance to infections at the highest possible level is the task the physician finds set for him. The danger of underdosing or overdosing is always at hand. The diet must be carefully planned to suit the individual needs, and the food must be measured. If the intake varies too greatly from day to day, accurate results from insulin are unobtainable.

Diabetics at the School in the Mayo Clinic are "briefed" in their battle for survival, and it is these tenets which are set down here, not in order that a patient may treat himself,—that is quite impossible; for he must be supervised in every detail, at all times by his physician, but to help him to follow directions which are couched in readily understandable, nontechnical language.

A novel feature of this little book is that "royalty rights are deeded to trustees" and are made available to aid diabetics who are in need of financial assistance to keep them going. A worthy cause indeed.

Obesity

The Management of Obesity. A Handbook for the General Practitioner. By LOUIS PELNER, M. D., associate physician, Greenpoint Hospital; assistant physician, Brooklyn Cancer Institute. Illustrated. New York: Personal Diet Service, Publishers, 1946. Pp. 144. Price $3.00.

The purpose of this practical, short handbook is to aid the general practitioner in treating his obese patients. It is a sensible, common-sense text, simply written and yet important physiological concepts of treatment have not been omitted. An interesting medical history of obesity has been included as well as chapters on the excessive mortality and morbidity of the obese. The author quotes the Metropolitan Life Insurance Company's analysis of 200,000 policy holders to show the amazing fact that the excess mortality of the obese individual is from 22 percent to 74 percent more than normal, depending upon the degree of obesity. The overweight group shows more deaths than normal from organic heart disease, angina pectoris, arterial disease, diabetes, nephritis, and cerebral hemorrhage. It is only in tuberculosis and pneumonia that the overweight individual has a better chance than the underweight individual. Carcinoma also showed an excessive mortality among overweights amounting to about 10 percent over the normal group. The mortality from accidents was lowest among the underweights and highest among the overweights. This is thought to be due to the lack of alertness and agility of the obese person. The suicide death rate is one-third higher in obese individuals.

The author reviews the various systems of the body and shows how obesity affects them adversely. An impressive case is built up, inditing fat as an enemy of the cardiac-circulatory system and the gastrointestinal system; as a predisposing cause of hernia, hemorrhoids, and diabetes; and as a cause of a postural syndrome, producing an accentuation of spinal curvature resulting in hypotrophic arthritis and radiculitis. All these factors produce a low physical reserve, which in turn increases the operative risk of surgery in an obese patient as well as making the operation technically more difficult.

The history taking and laboratory test method of physical examination of the obese person is discussed in detail as a way to determine whether there is an endocrine component to the obesity. Doctor Pelner describes the endocrine types of obesity but makes the important observation that they are not only rare but that weight reduction without dietary control is usually impossible in the glandular cases even though appropriate hormones are given.

The management of obesity is well discussed. The place of psychotherapy and drugs such as: benzedrine, atropine, gels, diuretics, and dexedrine sulfate, are indicated. Exercises for reducing (with illustrations) are helpfully included as well as excellent diet lists which contain common household as well as caloric measures. The nutrition of the normal body is touched on, for the author feels that if one knows normal values the danger of deficiency disease is avoided in the treatment of obesity. This text is worth having as a guide to the physician who treats obesity.

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JULY 1947

Medicolegal Notes

Hospital Records; Waiver of Privilege

By Ohio General Code, Section 12102-23, the legislature apparently intended to prescribe that notwithstanding, hospital records may contain matters which would otherwise be of a privileged nature, such records are nevertheless admissible by virtue of the provisions of the section, in view of the conflicting holdings of the Ohio court prior to the enactment of the statute "and the modern trend to admit such records in evidence". Weis vs. Weis, 76 Ohio App. 483, 65 N.E. 2d 300, a will contest. In this case the testator, by procuring his physician to sign as a witness to his will, waived Ohio General Code Sec. 11494, which forbids a physician from testifying on the subject of a communication made to him by his patients in that relation. The defendants, by calling this physician as a witness and examining him generally, waived any claim they may have had under Section 11494 as to the privileged character of the communications of the physician that might appear in the hospital records.

Weight of Expert Evidence

The weight of the evidence, in occupational disease cases and other workmen's compensation cases, does not lie with the side producing the greater number of witnesses. Therefore, a finding of fact of the Illinois Industrial Commission, that disability caused by hydrocyanic poisoning occurred, as contended by the claimant, was not set aside as manifestly against the weight of the evidence, where such a finding was supported by ample evidence, notwithstanding the fact that more experts testified to the contrary on the employer's behalf. Cinch Mfg. Corp., vs. Industrial Commission. 393 Ill. 131, 65 N. E. 2d 383.

Breathing Poisonous Gases

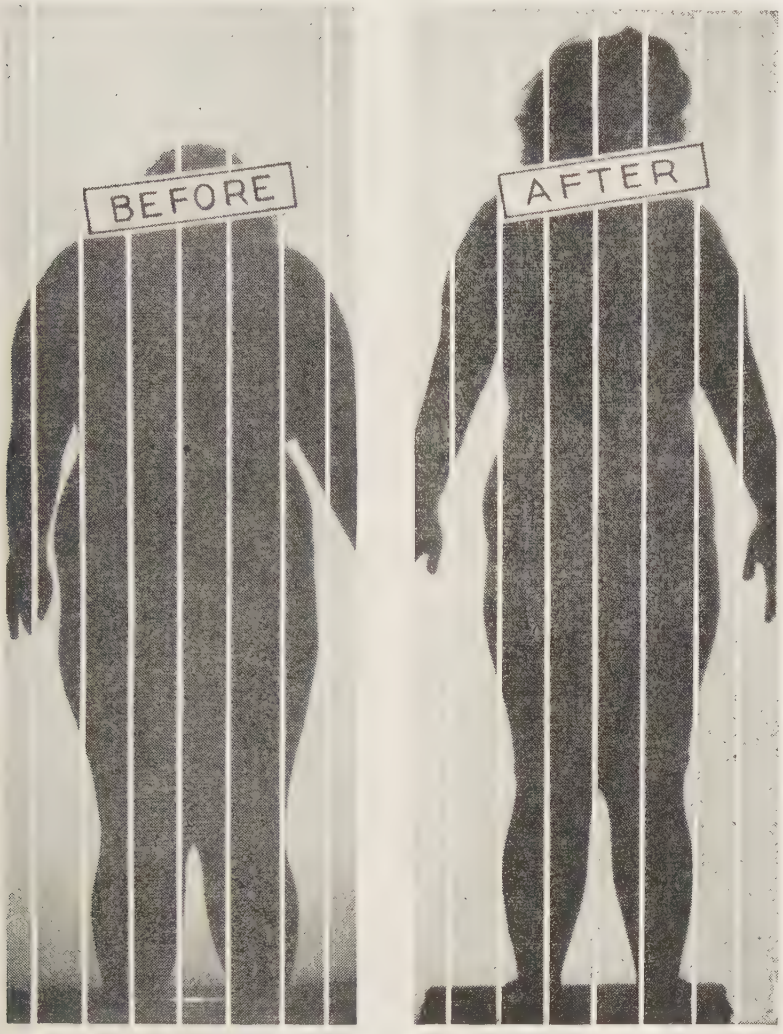
In a proceeding under the Kentucky Workmen's Compensation Act for the death of a coal miner, which was alleged to have been the result of "breathing bad air", the defense was a lack of evidence to support the award. The Kentucky Court of Appeals held that there was evidence for the claimants, tending to show that on the day the miner was taken ill, the room or heading in which he was working was not properly ventilated and that he was a strong able-bodied person, who had worked regularly for many years prior to his death. This evidence was contradicted in many respects by the employer's witnesses, but was held competent and of sufficient probative value to authorize the award of the Compensation Board, whose duty it is to determine the credibility of witnesses and the weight to be given their testimony. The referee's finding and an award adopted by the board, was therefore affirmed. Blue Diamond Coal Co., vs. Neace, 198 S.W. 2d 223.

Excessive Damages

In California the sum to be allowed as damages for personal injuries is left, in the first instance, to the sound discretion of the jury, subject to a review by the trial judge in ruling upon a motion for a new trial and the power of an appellate court to relieve a defendant from a judgment for an amount so plainly and outrageously excessive, as to indicate that the judgment was reached as the result of passion or prejudice and was not predicated upon a fair and honest consideration of the facts.

Applying this rule to a case where the evidence showed that the plaintiff's special damages amounted to $4,208.27, and a judgment for $13,964.83 showed that the jury had awarded $9,756.56 as general damages for pain, suffering and permanent disability; the California District Court of Appeals, Roedder vs. Boley, 166 P. 2d 292, held that the judgment for general damages was outrageously excessive, and ordered a remittitur of $7,256.56, so as to allow a sum not exceeding $2,500 for general damages, or a new trial.

It appeared that the plaintiff's general damages consisted solely in being incapacitated for work for less than two months, occasional headaches and at intervals numbness in his leg.



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In an action against a hospital for damages for personal injuries alleged to have been suffered by the plaintiff, as the result of an electric shock received while her foot was being x rayed, the trial court denied an examination of the hospital before the trial. On appeal, the Appellate Division modified the order granting it to cover the production of the hospital records, x rays and charts, pursuant to section 296 of the Civil Practice Act, along with the x ray machinery and equipment. The complaint, it was held, sufficiently alleged against the defendant hospital its failure to exercise care in the maintenance of its equipment. Taylor vs. Beekman Hospital, 62 N.Y.S. 2d 637.

Excessive Damages Reduced

An award of $15,000 was held excessive and subject to remittitur of $10,500 where the plaintiff, a man of fifty-one years of age, had been a cripple from early childhood, walking with the aid of crutches. A physician made a report four days after the accident, based on an anteroposterior x ray film, which showed a fracture of the top of the sacrum, another of the transverse process of the fifth lumbar vertebra and a prognosis that recovery would occur without any permanent disability. Another doctor examined him a few days before the trial and found no evidence of injuries to the plaintiff's back or sacroiliac joint. Ozan Lumber Co., vs. Tidwell, Arkansas Supreme Court, 198 S.W. 2d 182.

Autopsy Findings as Bearing on Cause of Death

In the case of Burr vs. the Commercial Travelers Mut. Acc. Ass'n of America, 295 N.Y. 294, 67 N.E. 2d 248, an action on a policy insuring against death caused solely and exclusively by external, violent and accidental means; where the insured died from a heart attack some time after having slipped and fallen against a shovel with which he was trying to dig his car out of a snow bank in which it was stalled, the evidence was held to sustain the jury's finding that the insured's death was caused by accidental means rather than by a heart attack.

There had been testimony as to the condition of the deceased upon autopsy, following exhumation. Against this, there was opinion evidence "that those findings did not portray and could not correctly have portrayed the actual condition of the coronary arteries of the deceased, when he was alive on the sixth day of March 1943, the day of the accident." The court held that it was not possible, on the record before it, for the appellate court to say that, as a matter of law, it was necessary for the jury to adopt the testimony based on the autopsy as against the opinion evidence on these findings.

"There is testimony", the court said, "that the autopsy, performed two and one-half months after death, disclosed conditions then existing in the body of the deceased with reference to his heart and arteries. Upon these facts some opinion testimony was presented on behalf of the defendant. On the other side, there were facts as to the physical examination of the deceased during his life, covering a period of nearly two and one-half years immediately prior to his death, together with testimony as to the nature and extent of the work done by him for a considerable period. Upon these facts, opinion testimony on behalf of the plaintiff was given. There was presented a question of fact which the jury resolved in favor of the plaintiff; that finding having been affirmed, we cannot say as a matter of law that there was no evidence to support it".

Conflicting Medical Testimony as to Cause of Condition

In a proceeding under the Pennsylvania Occupational Disease Act, where the claim was for total disability alleged to be the result of lead poisoning, disallowance of compensation was affirmed on the ground that the conflicting medical testimony sustained the finding of the Workmen's Compensation Board that the claimant's disability was due to chronic nephritis and not lead poisoning. The credibility and weight of the testimony of the medical experts were for the board, and it could not be said under the circumstances of this case, that there was any capricious disregard of the competent evidence by the board. Hosterman vs. Best, 158 Pa. Super. 617, 45 A. 2d 872.

Violation of Harrison Narcotic Act a Felony in Indiana

The Indiana Supreme Court, sustaining an order of the State Board of Medical Registration and Examination, revoking a license to practice medicine, surgery and obstetrics, held that proof that the holder of the license was guilty of, and was convicted in a Federal District Court of a violation of the Harrison Narcotic Law, constituted proof that the holder of the license was guilty of "gross immorality", and had committed a felony within the meaning of the state statute authorizing the revocation of a license.

In this proceeding, the license holder admitted violating the act, and under the uncontradicted evidence, it was established that he was guilty. He was convicted by the District Court for prescribing, dispensing and distributing narcotics, to wit: morphine sulphate, a derivitive of opium, without registering with the collector of said district and without securing from the person to whom the prescriptions therefor were issued, a written order on forms furnished by the Secretary of the Treasury. Such conduct constituted a violation of the Harrison Narcotic Law, and upon being so convicted, the license holder was sentenced to imprisonment for a year and a day. Such proof was held to disclose that the license holder was guilty of a felony. Board of Medical Registration vs. Moore, 70 N.E. 2d 354.

Birth Rate

In the first quarter of 1947 approximately 973,000 births were registered in the United States, according to preliminary estimates released today by the National Office of Vital Statistics, U. S. Public Health Service, Federal Security Agency. This is 46.5 percent more than the 664,000 births estimated to have been registered in the first three months of 1946, and it is 29 percent more than the number recorded in the first quarter of 1943, the year which held the record for births until outstripped by 1946.

Deaths in this country are estimated to have totaled 388,000 in the first three months of 1947. This is the same estimated number as that for the first quarter of 1946. In 1946 there was a mild epidemic of influenza and other respiratory infections that increased the number of deaths in January over the number recorded in non-epidemic years. In 1947 the incidence of influenza increased in March and the provisional death rate recorded for March was higher than for that month in any year since 1943. The death rate for this past March was 11.3 per thousand population, as compared with 11.7 for March 1943. For the first quarter of 1947 the death rate on a cumulative basis was 11.0 or 1 percent less than the comparable rate of 11.1 deaths per 1,000 population (excluding the armed forces overseas) for the first quarter of 1946.

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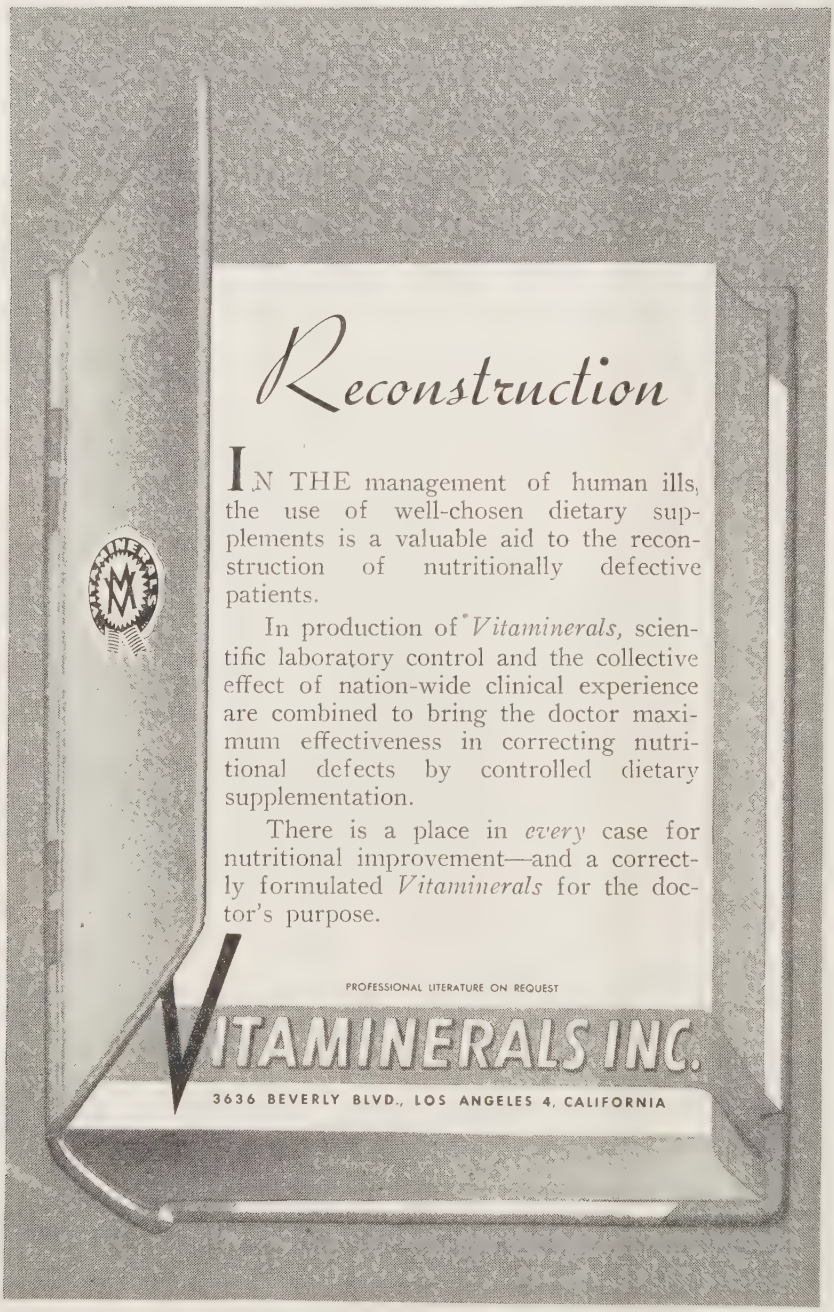

Appendicitis Mortality

According to the **Statistical Bulletin** of the Metropolitan Life Insurance Company, the mortality from appendicitis has been cut by more than one half in the past five years and by almost three fourths in the past decade. The age-adjusted death rate in 1946 was 3.2 per 100,000 (ages 1 to 74), as compared with a rate of 7.1 in 1941 and 11.5 in 1936. There is good reason to believe that within the next few years appendicitis will be reduced to a very minor cause of death in our country, and that medical science and public health administration will close another important chapter in their history.

The improvement in mortality has extended to the entire range of ages in each sex. The declines in death rate between 1940-1941 and 1945-1946 varied, according to age from nearly one third to more than two thirds. Among white men the smallest decreases occurred at the older ages; among white women the least gains were made at the main childbearing ages.

The situation now is a far cry from that about a decade and a half ago, when appendicitis, with about 18,000 deaths a year in the United States, was a serious and challenging problem. The death rate from the disease was mounting even though hospital facilities were growing and improving and medical and surgical skills were making marked advances. Intensive studies of case records showed that the case fatality from appendicitis was usually very low

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when the patient was treated before complications set in, but that the risk of death increased rapidly with delay in treatment. It was found also that patients who had taken laxatives after an attack of the disease had a higher proportion of cases with peritonitis than those who did not use such drugs. These findings led to a vigorous, nationwide educational program, in which the Metropolitan participated actively, urging people not to delay seeking medical advice and warning them not to use laxatives in the presence of abdominal pain.

Marked advances in the medical care and the surgical treatment of patients have also played a large part in reducing the death toll from appendicitis. In very recent years chemotherapy has probably been the outstanding factor in further reducing the mortality from the disease. There appears to be no evidence that the incidence of appendicitis is decreasing; in fact, the figures available seem to point the other way.

Baerensprung's disease. — Frederick Wilhelm Felix von Baerensprung was born in 1822 in Germany. He was one of the nineteenth century leaders of dermatology, and made many original microscopic studies. He described eczema margina'um with studies on the parasitology, hence Baerensprung's disease. Baerensprung's erythrasma gains its name by reason of his discovery of the Microsporon minutissimum in 1862. Baerensprung died of dementia paralytica in 1864.

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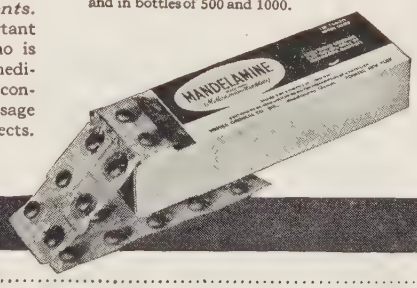

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New York University Rehabilitation Institute

Spurred by thousands of requests for aid from crippled and disabled persons throughout the country, officials of New York University have made public plans for the Institute of Rehabilitation, a separate unit in the new $15,575,000 New York University—Bellevue Medical Center, for which funds are now being sought.

Urgency of the need for the $2,500,000 institution, dedicated to advancing research and service for the nation's disabled was emphasized by Chancellor Harry Woodburn Chase of New York University at a rehabilitation demonstration in Times Hall, N. Y., before an audience of 500 persons. "The building has been given top priority in the construction of the entire Center", Chancellor Chase said. "Its actual construction will begin as soon as the required funds are assured. Approximately $500,000 of the total has already been raised".

Plans announced indicate that accomodations for 300 patients will be provided in the new building, which will also include a home-making training unit, dedicated to preparing physically handicapped women to carry on their home duties.

Dr. Rusk pointed out that specially-designed wheelchairs, vacuum cleaners and other household equipment will feature the unit. Special gymnasia for disabled patients are also planned, along with extensive units for hydrotherapy and physical medicine departments. Patients will also have the additional advantage of a sun deck, overlooking the East River, and constructed over the one-story dining room.

"Nationwide interest has already been created in our project", Dr. Rusk said, "and thousands of letters have been received from crippled and disabled persons asking for guidance in rehabilitating themselves. There are approximately 1,250,000 disabled persons in the Metropolitan area, and it is expected that the work at New York University—Bellevue Medical Center will set a pattern which will be followed in other communities."

The first building of its kind designed to advance research in the "third phase of medicine", which seeks to help the patient from the bed to the job, the Institute of Rehabilitation will incorporate in its construction the findings of a national survey made by the Baruch Committee on Physical Medicine.

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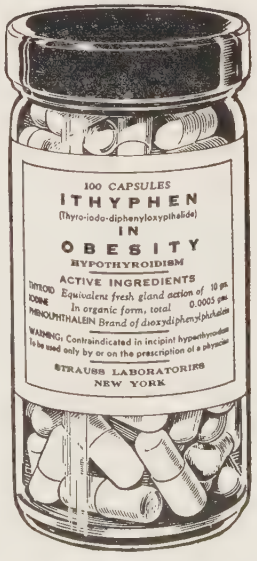

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Bristol-Myers Company Grant

Mr. W. M. Bristol, Jr., Executive Vice-President of the Bristol-Meyers Company, manufacturing chemists, has announced a grant-in-aid to McGill University, Montreal, to enable it to establish a Research Institute of Bio-Physics within the Department of Medicine of the McGill University Medical School and the establishment of fellowships therein. The Research Institute will be under the directorship of Dr. K. A. Evelyn, Ph.D. M.D.

In referring to the grant at a meeting of McGill associates, Dr. F. Cyril James, Principal and Vice-Chancellor of McGill University, said in part: "Another project of far-reaching interest, which will be housed in the Donner Building, is the Research Institute of Bio-Physics under the direction of Dr. Kenneth Evelyn. This Research Institute, operating within the Department of Medicine, has been made possible by a generous grant from Bristol-Myers Company of New York City which will cover the cost of a comprehensive five year program of investigations in the field of medical radio activity and cardiovascular research. Through the cooperation of McGill University and the Royal Victoria Hospital, Dr. Evelyn's work will embrace both laboratory and clinical aspects of the problems under analysis, while the Bristol-Myers research grant will make it possible to assemble a team of five or six outstanding scientists to work under the direction of Dr. Evelyn, whose brilliant record at McGill, in the Royal Canadian Air Force and at Harvard offers high promise of significant results."

The Research Institute will consist of a clinical unit for the investigation and treatment of selected patients and a laboratory unit which will provide facilities for fundamental research, as well as for the routine analytical procedures connected with the work of the clinical unit. The laboratory unit will be housed in the Donner Building for Medical Research. The Donner Building adjoins both the Medical School and the newly constructed Radiation Laboratories and Cyclotron, which is the largest in the British Empire.

The Research Institute will immediately commence investigation in medical radio-activity and cardiovascular research.

In announcing the grant, Mr. Bristol said: "Our Company is enthusiastic about the project and happy to collaborate with McGill University in this field, which is one of the most important areas of medical research at the present time. We expect that advantage will be taken of the newer knowledge in atomic physics in an attempt to shed new light on the cause and treatment of diseases of the heart, blood vessels and kidneys."

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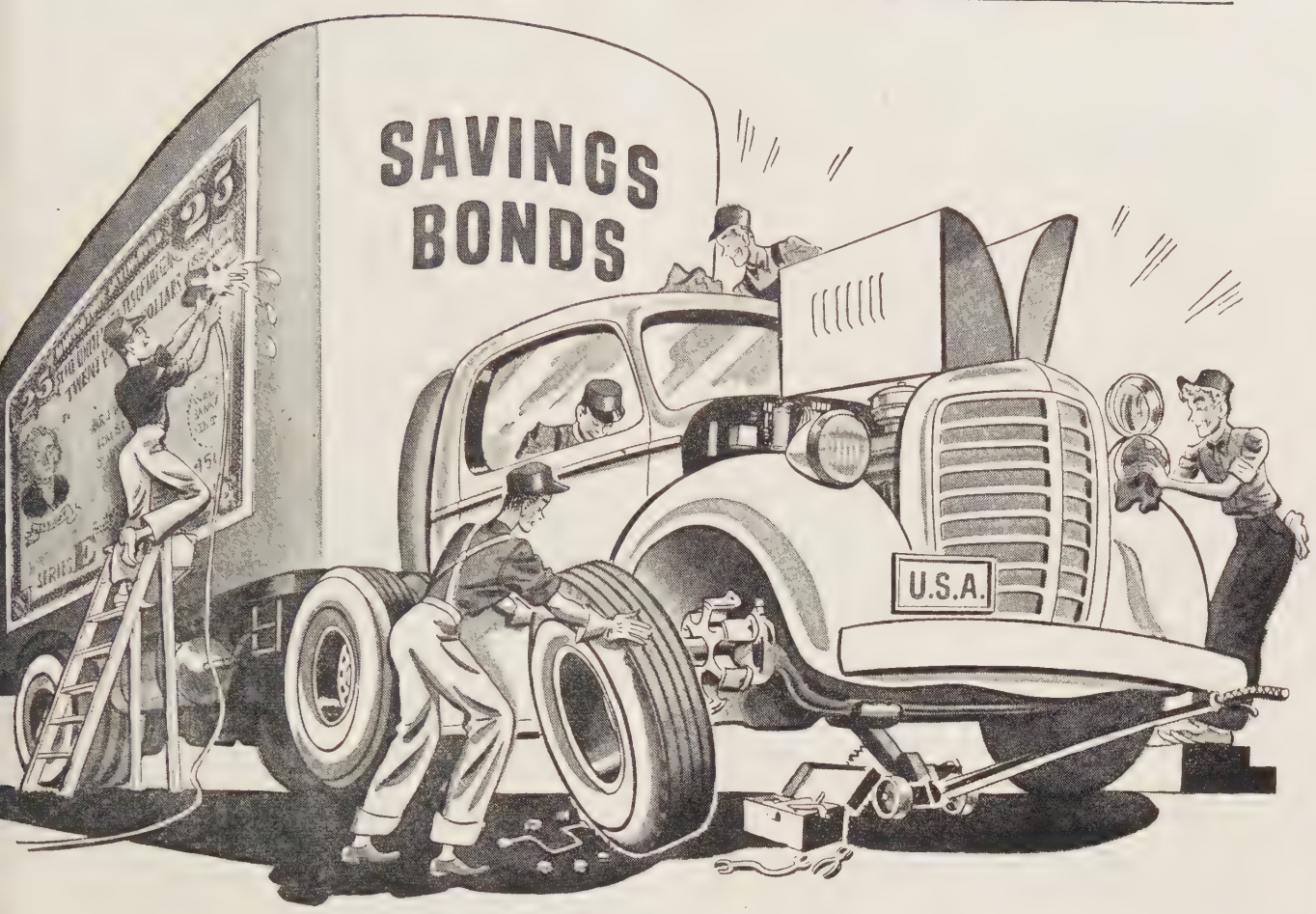

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For any help you need in conducting the Payroll Plan, call on your State Director of the Treasury Department's Savings Bonds Division.

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The Treasury Department acknowledges with appreciation the publication of this message by

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NEW PRODUCTS

Hypo-allergenic Cosmetics

Almay, Inc., manufacturers of hypo-allergenic cosmetics, have developed and are presenting a new face powder. The soft clinging texture of this powder has been accomplished by a new process in manufacturing and the powder is actually "super-milled".

Eight new shades, perfumed and unscented, tailor-made to harmonize with natural skin tones, make possible the selection of the right shade for each woman.

This new face powder is now available through local wholesalers or through Schieffelin & Co., New York 3, N. Y., sole national distributors for Almay, Inc.

Anti-Ringworm Product

A new product, Ansadol Ointment "Rorer" is now being introduced by William H. Rorer, Inc., Philadelphia pharmaceutical manufacturers.

This new product, strikingly successful in treating ringworm of the scalp, contains 4.5 percent salicylanilide in a special base. Salicylanilide is a chemical compound new to medicine, which, when first used therapeutically by the U. S. Public Health Service, proved to surpass all other fungicidal measures commonly employed, and was successful in 84 percent of all cases treated. (Schwartz, L., etal.: *J. A. M. A.*, 132:58, Sept. 14, 1946) Ansadol Ointment "Rorer" is available in 4 ounce and 1 pound jars.

Price Reduction of Female Sex Hormone

Roche-Organon Inc., Nutley, N. J., manufacturers of hormone preparations, have announced substantial reductions in the prices of their injectable female sex hormone preparation, Dimenformon Benzoate (alpha-estradiol benzoate) vials and ampuls. All strengths and package sizes of Dimenformon Benzoate vials and ampuls have been reduced thirty percent in price. At the same time, the company has introduced a new package of Dimenformon Benzoate vials —an economy package of 6 vials—which reduces the price of Dimenformon Benzoate therapy as much as fifty-nine percent.

The new reduced prices are now in effect at all pharmacies and physicians' supply houses. The 10-cc. economy vials of Dimenformon Benzoate are available in 2 strengths: 0.333 mg. (2,000 R.U.) per cc. and 2.0 mg. (12,000 R.U.) per cc.; boxes of 1 and 6. Dimenformon Benzoate ampuls (1 cc.) are available in 5 strengths: 0.1 mg. (600 R.U.) and 0.166 mg. (1,000 R.U.) boxes of 6, 50, and 100; 0.333 mg. (2,000 R.U.) and 1 mg. (6,000 R.U.), boxes of 3, 6, 50, and 100; 1.66 mg. (10,000 R.U.), boxes of 5, 50, and 100.

Quin-Diem

McNeil Laboratories, Inc., Philadelphia, Pa., are promoting to the medical profession a new product—Quin-Diem—"balanced" high potency multivitamin therapy for the treatment of marked vitamin deficiency states.

Each Quin-Diem capsule contains: vitamin A —25,000 U.S.P. Units; vitamin D—1,000 U.S.P. units; thiamine hydrochloride—5 mg.; riboflavin —10 mg.; niacinamide—50 mg.; and ascorbic acid—150 mg.

They are golden-yellow gelatine capsules in bottles of 50, 100 and 250.

Drug to Aid Asthmatic Sufferers

A new drug known as Butanefrine, which promises aid particularly to asthmatic children and to older sufferers from asthma who also have high blood pressure, will soon be available, it is announced by Dr. Justus B. Rice, vice president in charge of medical research of the Winthrop Chemical Company, Inc.

The drug is known chemically as racemic 1-(3,4-dihydixyphenyl) 2-amino-1-butanol hydrochloride. Dr. Maurice L. Tainter, now research director of the Sterling-Winthrop Research Institute, began basic research on the drug in 1936 when he was associated with Stanford University in California. During clinical investigation, the drug was designated "E.N.E."

Most recent clinical studies were reported by Doctors Howard M. Hubert and John P. Doenges of the School of Medicine, University of Maryland. They picked forty cases of bronchial asthma at random and administered the drug intramuscularly during sixty-six different attacks. An additional sixteen cases were studied for results of intravenous administration. In their conclusions subsequently published in the school's *Bulletin* they stated Butanefrine is a "valuable anti-asthmatic agent." They found it to be "particularly valuable in children because of its low toxicity, and because of its lack of stimulation of the central nervous system." At the same time they emphasized its usefulness for treatment of patients suffering from high blood pressure, "because of its lack of pressor qualities."

Dr. Rice described the drug as one that has important therapeutic advantages over the already commonly used therapeutic agent, epinephrine, indicated for allergic asthma. He said clinical investigations had shown it relaxes the bronchial muscles without appreciable increase in blood pressure. He also pointed out that it has been found valuable in cases where epinephrine has been used over long periods and patients no longer respond effectively to it.

Recommended dosage for the average adult, subcutaneously or intramuscularly, is 1 cc. of a .2 percent solution. By inhalation, 1 cc. of a 2 percent solution can also be given.

Dr. Rice announced that Butanefrine would be available to physicians and hospitals within a short time in 10 cc. vials and 1 cc. ampuls.

Eskaphen B Elixer

The Smith, Kline & French Laboratories, Philadelphia, Pa., have introduced a product, Eskaphen B Elixer, a palatable elixir of phenobarbital and thiamine hydrochloride, especially designed for the nervous patient with poor appetite.

Each 5 cc. (1 teaspoonful) supplies phenobarbital, ¼ gr. (16 mg.), and thiamine hydrochloride, 5 mg., in a wine base containing 15 percent alcohol.

Eskaphen B Elixir is useful—especially when there is evidence of a mild B_1 deficiency—in the symptomatic treatment of conditions characterized by anorexia, disturbed sleep, subjective fatigue, irritability and emotional instability.

It is available on prescription only in 6 fluid ounce bottles.

New Burn-Treating Method

According to the Glycerine Producers' Association, glycerine is finding growing use in the treatment of burns. Its usefulness for such purposes is evident in a new odorless method of treating burns reported by F. E. Ludwig in *Surgery* (19:486. 1946). In this method, burns are treated with a saline-glycerine-acetic acid solution having a pH of about 3.8. On the basis of use in the treatment of 358 burns, Ludwig gives its advantages as follows: Odor from the burns is eliminated; there is no maceration of tissue; the hygroscopicity of the glycerine makes the dressing changes easier and apparently stimulates epithelization; the acetic acid prevents pyogenic infection, the burns are cleaned by the solution: the dressings may be changed without anesthesia; and a minimum of grafting is necessary under this method of treatment.

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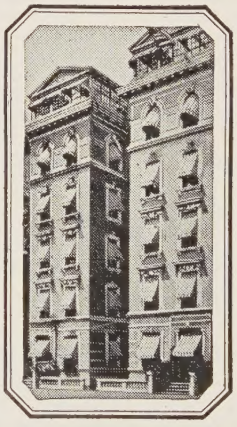

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National Release of "Delcos" Granules

National release of "Delcos" protein-carbohydrate granules, an exceptionally palatable protein nutritional agent containing all essential amino acids, is announced by Sharp & Dohme, Inc., Philadelphia.

This pleasantly-flavored protein concentrate is for treatment of protein nutritional deficiency states. It provides as natural whole protein fully available amounts of all amino acids considered essential for maintenance of nitrogen equilibrium and normal growth.

"Delcos" granules are easily administered, quantitatively assimilated, and entirely acceptable to the patient even in extremely large doses. Each 100 Gm. contains protein (derived from milk) 50 Gm., and carbohydrate (derived from sugar and milk sugar) 30 Gm. Carbohydrate spares the amino acids for utilization in synthesis of tissue protein and minimizes their use for production of energy.

"Delcos" granules are indicated in treatment of protein nutritional deficiency states such as may occur in surgery, severe burns, infections, convalescence and chronic disease, peptic ulcer, ulcerative colitis, pregnancy and lactation, nutritional edema and geriatrics.

"Delcos" granules may be added to milk, puddings, junket, gelatin desserts, cereals, fruit juices, fresh fruits, ground meats, salads, waffle batter, ice cream or similar dishes. It is supplied in 1-pound and 5-pound packages.

Fluoro-Record Camera

Fairchild Camera & Instrument Corp. has announced a new 70-mm. Fluoro-Record camera for x ray cut-film use only.

The camera is designed for hospitals in making routine chest x rays of both in and out patients at the time of admittance; in clinics; at industrial plants' medical departments making chest x ray negatives, a part of employee health records, and in many other applications. Simplified photo x ray equipment is being designed by manufacturers of x ray machines, to be used with this camera.

Either stereoscopic pairs or two successive single pictures of each piece of 6½"x2¾" cut film are permitted with this camera. Exposures may measure either 2½"x2½"x3", and both sizes are convenient for reading and filing. Exposures are made automatically when the x ray tube energizes the fluoroscopic screen. The two-exposure cut-film holder used with the camera can be shifted from first to second exposure position either electrically, by remote control, or by manual release.

The cut-film Fluoro-Record camera can be interchanged with the standard electrically- operated Fairchild 70-mm. roll-film camera on existing photo x ray units, or used with the specially-designed machines. The camera is available through the regular suppliers of x ray equipment.

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